



American Foundryman

A PUBLICATION PRESENTING ASSOCIATION AND CHAPTER ACTIVITIES



Gauging cores for magnesium castings. Photo, Courtesy Dow Chemical Co., Bay City, Mich.

Your New President's Message, See Inside Front Cover—
Summary of New York Convention, Annual Awards Lecture,
Apprentice Winners, See Pages 2 to 16—21st Chapter to Be
Organized, See Page 22.

June
1941

A Message From Your President



THE forthcoming year will probably be a critical one by reason of the international situation and the uncertainty of the turn of events, so we have a most important and solemn duty before us.

We believe, however, that the American Foundrymen's Association will be able to help meet the situation as our activities and membership participation are greater than ever before. In this position, the Association can meet its task of serving the industry and its members in this critical period through the work of its committees, its meetings, and its chapters, in collecting and disseminating information on research, practices, methods, materials and equipment and all developments vital to the industry and the defense program.

While C. E. Hoyt is retiring as Executive Vice-President, we will continue to have his guidance and counsel in connection with the exhibits. In electing C. E. Westover as Executive Vice-President and Treasurer, we have a man in whom we have the utmost confidence as a leader and director to strengthen our activities and further develop the Association, making it more and more valuable to its members.

It is my hope that we can increase our effort to sell the Foundry Industry to everyone, using every available means to do so. Castings are serving an important place in industry, not only in this country but all over the world. Let us strive to keep castings foremost among the necessary things required for the advancement of our civilization.

A handwritten signature in cursive script that reads "H. S. Simpson".

H. S. SIMPSON, President,
American Foundrymen's Association.

Your newly elected president, Herbert S. Simpson, is president, National Engineering Co., Chicago, Ill., and a well-known figure and leader in the foundry and foundry equipment industries. He has long been active in the work of the Association and has supported many of its projects financially. Mr. Simpson is well qualified to serve as president of A.F.A. as he has served as a member of the Board of Directors, been active in Chapter work, and has just finished a term as vice president and chairman of the National Membership Committee. Through his work as National Membership Chairman, the Association enrolled the largest number of members in a single year in its history as well as reaching a new high in total members.

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H. S. SIMPSON*
National Engineering Co., Chicago, Ill.

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American Foundryman



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Entered as second class matter July 22, 1938, at the post office at Chicago, Illinois, under the Act of March 3, 1879.

Defense Problems Occupy Members at New York Convention

IT HAS been said that industry is the bulwark of defense and since the foundry industry is one of the basic industries of the country, it was not surprising that defense problems should occupy the minds and be the center of discussions among the more than 1,500 foundrymen attending the 45th Annual Convention of the American Foundrymen's Association, in New York City, at Hotel Pennsylvania, May 12 to 15.

That this Annual Convention was a success, there can be no doubt. Many in attendance expressed their delight at features in which they were particularly interested and others, commenting on the program as a whole, stated that the technical papers and discussions were the best ever presented by the Association. Much of the success of the



President L. N. Shannon, Stockham Pipe Fittings Co., Birmingham, Ala., During Whose Term the Successful 1941 Convention Was Held.

Convention, especially from the attendance and the entertainment viewpoints, was due to the splendid cooperation of members of the local committees of the Metropolitan Chapter, our hosts, and to cooperating local foundrymen's associations in the Eastern section of the country.

Although defense problems were not specified as the theme of the convention, considerable thought had been given by the program committees of the various divisions in preparing programs which emphasized such points as the training of needed personnel for foundries during this period of stress, substitution of various types of steel melting scrap due to scarcities of certain other types, a discussion of cupola operation at a special session on how to operate under various conditions using types of scrap not heretofore used, the substitution of certain types of non-ferrous alloys for others where a shortage exists, and others.

The program was diversified with few problems of a technical and management nature overlooked. Of especial interest was the high plane of the

speakers at the general interest sessions. With such authorities as W. F. Patterson, chief of apprenticeship, Division of Labor Standards, Washington, on apprentice training; Phil Carroll, Jr., consultant, New York City, and A. L. Kress, National Metal Trades Association, Chicago, on time study and job evaluation, and Glenn Gardiner, Forstman Woolen Co., Passaic, N. J., and Elliott Service Co., New York, a recognized authority on foreman training, one could not help but secure valuable information on these subjects.

In addition to the sessions on apprentice training, job evaluation and time study, and foreman training, foundry refractories were discussed at a session sponsored by the Foundry Refractories Committee. The Foundry Cost Committee also sponsored a session on that subject at which a paper on the use of a variable budget in the foundry excited considerable interest and discussion. In addition, a report on the further work of the committee in its study of the classification of foundry costs was presented.

Meeting on Cupola Scrap

The Apprentice Training Committee sponsored a session on that subject and, in addition to the paper presented by Mr. Patterson, as mentioned previously, a subcommittee reported on the progress being made in compiling a booklet describing the opportunities available in the foundry. The final part of the meeting was devoted to a symposium on related instruction for foundry and pattern shop apprentices.

Of special interest to gray iron foundrymen was a meeting on cupola melting, held on Tuesday evening, May 13. This meeting was sponsored by the Subcommittee on Scrap, Cupola Research Com-

On Opposite Page—Around the Convention with a Candid Camera, Convention Personalities.

(Photos, Courtesy S. N. Farmer, Sand Products Corp., Cleveland, and B. H. Booth, Jackson Iron & Steel Co., Jackson, Ohio.)

Tom Johnson of Republic and Ed. Bumke and Joe Drain of Oliver Farm Equipment Talk Things Over.

(Photo Courtesy B. H. Booth, Jackson Iron & Steel Co., Jackson, Ohio)







Ronald Webster of Hydro-Blast, V. H. Schnee and J. D. Sullivan of Battelle and E. F. Cone of Metals and Alloys Enjoyed Themselves. (Photo Courtesy B. H. Booth, Jackson Iron & Steel Co., Jackson, Ohio)

mittee. Some time ago, a decided shortage developed in certain types of steel scrap used for the production of low-carbon cast irons. At that time, the industry was appraised of the fact and the Cupola Research Committee sponsored this session on cupola operation that technical operating information might be secured on how practices might be adjusted.

Annual Lecture Course

A feature of the program was the Third Annual Lecture Course on "Core Room Practice and Theory," presented by Harry W. Dietert, Harry W. Dietert Co., Detroit. This year, the course consisted of a series of four lectures on core binders, core mixtures and baking, defects due to cores, and controlling physical properties of cores. These sessions were particularly well attended because of the practical information given by the lecturer. This series of lectures will be continued at the 1942 convention and the subject matter of the talks will be available in book form, considerably expanded, at the conclusion of the series.

Sand

Sand, in which every foundryman is interested, was discussed thoroughly during the convention. For those interested in the practical application of sand testing, a series of sand control shop courses, covering sand control in non-ferrous, gray iron, steel and malleable foundries was held, one session each day of the convention. For those interested in the research phases of the subject, two sessions on foundry sand research were held. One session was devoted specifically to research on steel foundry sands and the other to such subjects as coordinating sand test results with foundry practice, methods of adding rebonding clays to systems, and the reproducibility of test results.

Non-Ferrous

Members of the Association were especially pleased with the interest shown in the Non-Ferrous Division technical sessions. Attendance and interest was much greater than anticipated. The Non-Ferrous Division committees did an outstanding job this year in preparation of the program. Two technical sessions were held, one covering melting problems and the other dealing with alloys of special interest in defense matters, namely, magnesium and silicon bronze.

Special reference should be made to the excellent efforts of Chairman C. V. Nass and his committee on the Non-Ferrous Division round table luncheon and conference. This year they staged the largest such conference ever held by the division. The large attendance was made possible through the active cooperation of the Metropolitan, Philadelphia, Chesapeake, Western New York and Central New York chapters, New Jersey Foundrymen's Association, North Jersey Foundrymen's Association, New England Foundrymen's Association, Connecticut Non-Ferrous Foundrymen's Association and the Metropolitan Brass Founders' Association. A feature of the conference was a paper on the causes of porosity and leakage in non-ferrous castings.

Malleable

The Malleable Division sponsored two successful and interesting technical sessions and a round table conference. The first session was devoted to two papers of a theoretical nature and one of practical value in increasing the application for that material. Of interest to the theoretically inclined were the two papers dealing with the graphitization of cementite in white iron and the velocity of conversion of austenite to ferrite and cementite. The third paper was devoted to a discussion of methods for flame hardening malleable iron.

The use of malleable iron castings in the National Defense Program was the subject discussed at length in the second session. This paper outlined the present uses of malleable castings in materiel and other defense products. The second paper discussed methods by which better control could be exercised over the duplex melting process.



Mr. and Mrs. R. F. Harrington and Past President and Mrs. E. H. Ballard Await the Festivities. (Photo Courtesy S. N. Farmer, Sand Products Corp., Cleveland)

The excellent round table conference staged by the division discussed many pertinent problems of immediate interests to the malleable industry.

Gray Iron

In addition to the four sessions of the Annual Gray Iron Foundry Shop Practice Course, one held each day of the convention, three technical sessions of the Gray Iron Division were held. The gray iron foundry shop practice courses are held

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each year for the benefit of the practical foundryman and were equally as successful in 1941 as they have been each year since their inception. This year such subjects as cupola practice and equipment, gating and risering, electric furnace melting and causes and remedies for castings defects were discussed. The latter session was under the auspices of the Gray Iron Division Committee on Analysis of Castings Defects.

The first technical session discussed such subjects as combustion theories relating to cupola operation and the effect of moisture and preheating the cupola blast. Of especial interest was a discussion on the gating and risering of castings for high pressure work. The second session dealt with both practical and theoretical problems, such as the effect of pouring temperature on the physical properties and microstructure of gray iron, factors influencing the graphitizing behavior of cast iron, the effect of ladle inoculation on the solidification of cast iron and the effects produced by undercooling in gray iron.

The final technical session discussed two papers, one dealing with methods for developing and controlling the engineering properties of cast iron and the second on the heat treatment of that material. The former paper outlined the methods used to produce a cast iron with tensile strength properties as high as 105,000 lb. per sq. in. while the latter reported the results of an investigation on the hardening capacity of cast iron when subjected to various heating and quenching treatments.

Steel

This year, the Steel Division held three interesting technical sessions and a luncheon. No specific topic was discussed at the luncheon, but the interest manifested in the papers presented at the technical sessions made up for this deficiency.

Two papers were presented at the first session, one dealing with such converter developments as the use of the electric eye for determining proper length of blow and the recently reported dephosphorizing process and the second, on the use of models for improving steel castings practice as used in the Norfolk Navy Yard.

At the second session, a paper was presented in which the authors explained their conception of the mechanism which produced porosity in steel castings. They believe that the reaction of hydrogen with FeO is the cause of this annoying defect. In addition to this paper, two reports by the Committees on Radiography and Impact Testing were presented. The former summarized the results of the second survey of the steel castings industry with regard to the use of radiography.

The use of radiography as a tool for improving foundry practice was emphasized by those answering the questionnaire.

The third session of the steel division discussed a paper on the relative fluidity of various types of steel, both plain and alloyed, used for casting, as determined by the spiral fluidity test. This was a monumental piece of work and brought forth a

lengthy discussion. The work was performed at the Naval Research Laboratory, Anacostia Station, Washington, D. C.

Safety and Hygiene

One of the sessions of particular interest to management was the session on safety and hygiene. Presented for consideration at the meeting was a suggested code of good practice for the medical control of foundry workers' health by D. E. Cummings, director, Division of Industrial Hygiene, Dept. of Medicine, University of Colorado, Denver, a recognized authority in this field. The necessity of cooperation for industry progress in the safety and hygiene field was emphasized by Roger Williams, assistant director, Inspection and Service Dept., The State Insurance Fund of New York, while J. R. Allan, assistant manager, Industrial



With R. H. Stone of Vesuvius in the Group. They Probably Are Discussing Non-Ferrous Furnaces.

(Photo Courtesy S. N. Farmer, Sand Products Corp., Cleveland)

Engineering and Construction Dept., International Harvester Co., Chicago, and chairman, A.F.A. Industrial Hygiene Codes Committee, discussed recommended good practices for safety and hygiene in the foundry.

Engineering and Apprentice Instructors' Dinners

Of special interest this year were the two dinners held for the engineering and apprentice instructors, respectively. In previous years, these two groups had met jointly to discuss foundry educational problems. This year, each group held its own dinner meeting.

At the Engineering Instructor's Dinner, two papers were presented, the first dealing with the course in foundry control methods offered at the University of Minnesota and also the advanced courses in foundry methods offered at that institution. The second paper dealt with the place of the engineering graduate and the opportunities offered in and by the foundry industry.

The apprentice instructors, at their dinner, discussed various experiences in apprentice training. Subjects ran from personal experiences to the various types of work required in the different schools represented. One of the main topics of discussion was the training methods used for the production of workers in defense industries. This group voted to hold a meeting separate from the engineering instructors at the next convention.



President H. S. Simpson



Vice President D. P. Forbes



Executive Vice President and
Treasurer, C. E. Westover



Director L. N. Shannon,
Retiring President

A. F. A. Elects New Officers and Directors

AT the annual business meeting of the American Foundrymen's Association held Wednesday morning, May 14, at the Hotel Pennsylvania, New York City, the following were elected officers of the Association:

President to Serve One Year—

H. S. Simpson, National Engineering Co., Chicago, Ill.

Vice President to Serve One Year—

D. P. Forbes, Gunito Foundries Corp., Rockford, Illinois.

Directors to Serve for Three Years—

Retiring President L. N. Shannon, Stockham Pipe Fittings Co., Birmingham, Ala.

R. J. Allen, Worthington Pump & Machinery Co., Harrison, N. J.

J. G. Coffman, Los Angeles Steel Casting Co., Los Angeles, Calif.

W. J. Corbett, Atlas Steel Casting Co., Buffalo, New York.

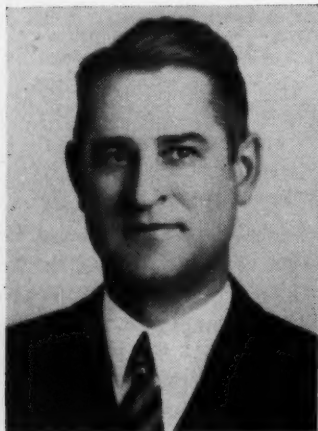
M. J. Gregory, Caterpillar Tractor Co., Peoria, Illinois.

At a meeting of the Board of Directors of the Association on May 15, the staff officers of the Association were appointed. C. E. Hoyt, Execu-

tive Vice President, Treasurer and Manager of Exhibits, is relinquishing his duties as Executive Vice President and Treasurer, and C. E. Westover, Burnside Steel Foundry Co., Chicago, has been appointed to these offices. Mr. Hoyt retains his position as Exhibit and Convention Manager of the Association.

The newly elected Executive Vice President and Treasurer, Mr. Westover, comes to the Association well qualified to carry on and direct the work because of his knowledge of the industry and the Association. A native of Lincoln, Neb., he entered the foundry industry following graduation from the University of Nebraska, Lincoln, the industry in which his father had been engaged for many years.

At first he was interested in the manufacture of gray iron and non-ferrous castings. Later he became associated with the Omaha Steel Works, Omaha, Neb., in the steel foundry, and served in turn as works manager, Denver plant, American Manganese Steel Div., American Brake Shoe & Foundry Co.; superintendent, Otis Elevator Co., Buffalo, N. Y.; superintendent, Farrell-Cheek Steel Foundry Co., Sandusky, Ohio; and finally, as works manager, Burnside Steel Foundry Co., Chicago, from which position he is resigning to assume his new position on July 1.



Director W. J. Corbett



Director M. J. Gregory



Director R. J. Allen



Director J. G. Coffman

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Mr. Westover has been active in the work of the American Foundrymen's Association, serving as a member of committees and in 1939 as chairman of the Chicago chapter of that organization.

In addition to the above appointments, R. E.

Kennedy was re-elected Secretary; N. F. Hindle, Assistant Secretary; E. O. Jones, Director of Safety and Hygiene and Assistant Manager of Exhibits; and Jennie Reininga, Assistant Treasurer.

Business and Awards Meeting is Convention High Point

THE high point of the convention sessions was the Annual Business and Awards meeting on Wednesday morning. President Shannon, in his presidential address, stressed the importance of the work of the Association, through its technical activities, and papers, both before the annual meeting and those of its chapters, in furthering the National Defense program. He emphasized the possibilities of the chapters in training workers through educational courses and in cooperation with the schools and other training organizations. He then reviewed the progress made this past year in the intensive membership campaign, giving figures which showed the membership committee, working with the chapters, had brought the membership up to a new record of over 4,000 members. President Shannon's address will appear in full in a later publication of the Association.

Executive Vice-President Reports

C. E. Hoyt, in his report as Executive Vice President, reviewed the activities of all the Association's committees and developments, announcing his resignation as Executive Vice President, to take effect July 1. He expressed the hope that continuing as Convention and Exhibit Manager he would be able to devote more time and attention to this important phase of the Association's work than before. The appointment of C. E. Westover to succeed Mr. Hoyt as Executive Vice President was made at this time when President Shannon introduced Mr. Westover to those present.

Election of Officers

President Shannon then called for a report of the election of officers and directors. This report was read by the secretary.

As there had been no other candidates for officers and directors nominated in the manner provided in the By-Laws, Article IX, Section 5, the secretary was instructed to cast a unanimous ballot for those named and these officers and directors were declared duly elected, and introduced to the audience. Results of the election are given on page



H. M. Lane

6, together with photographs of the new officers and directors.

1942 Nominating Committee

The nomination of four members, to serve with the last three

past presidents as members of the 1942 nominating committee, was read by F. A. Melmoth, Detroit Steel Casting Co., Detroit, chairman of the Pre-nominating Committee. Those nominated were:

M. F. Doty, Clark Equipment Co., Buchanan, Mich.

Alternate: S. V. Wood, Minneapolis Electric Steel Casting Co., Minneapolis.

S. C. Wasson, National Malleable & Steel Castings Co., Indianapolis, Ind.

Alternate: W. D. McMillan, International Harvester Co., Chicago, Ill.

E. F. Hess, Ohio Injector Co., Wadsworth, O.

Alternate: T. C. Watts, Falcon Bronze Co., Youngstown, O.

L. E. Everett, Kaukauna Machine Corp., Kaukauna, Wis.

Alternate: C. J. Lonnee, Muskegon Piston Ring Co., Sparta, Mich.

President Shannon then called for other nominations and there being none, a motion was made, seconded and carried to elect those whose names had been presented by Mr. Melmoth.

Greetings from Australian Foundrymen

Frank G. Steinebach, chairman of the Association's Interna-

Cleveland Chosen as 1942 Convention City

THE Board of Directors of A.F.A. has voted unanimously to accept the invitation extended by the Northeastern Ohio chapter to hold its 1942 Convention and Exhibition of Foundry Equipment and Supplies in Cleveland. The dates are the week of April 20, 1942, with a pre-view of the Exhibition on Saturday, April 18. The staging of an exhibit in conjunction with the 1942 Convention is in accord with the policy of the Association to hold such events every two years, on even numbered years.

Prior to the decision to designate Cleveland as the 1942 convention city, invitations from other cities were considered carefully and satisfactory agree-

ments had been signed with the Cleveland Convention Bureau, Public Auditorium, where the exhibit will be held, leading hotels and for various convention and exhibit services.

Cleveland is recognized as an ideal convention city. Its ample hotel facilities, its excellent accommodations for the exhibition of foundry equipment and supplies, plus its central location with relation to centers of the foundry industry, all influenced its choice as the 1942 convention city.

The 1942 convention and exhibition of foundry equipment and supplies will be the sixth held in Cleveland. Other conventions and exhibits were held in 1906, 1916, 1923, 1930 and 1938.

Cleveland—1942

tional Relations Committee, read the following radiogram received from the Institute of Australian Foundrymen:

*American Foundrymen's Association,
Hotel Pennsylvania,
New York.*

*Greetings and all success to
your convention from the In-
stitute of Australian Foundry-
men.*

A. M. Tennant, President.

The secretary was instructed to send greetings and best wishes to the Institute of Australian Foundrymen.

Honorary Life Membership

With Vice President Simpson presiding, the secretary read the report of the Board of Directors which, acting on the recommendations of the Board of Awards, had conferred Honorary Life membership on President Shannon and Henry M. Lane, Grosse Isle, Mich.

Medal Awards

President Shannon next announced that the meeting was turned over to Past President H. S. Washburn, chairman of the Board of Awards. Mr. Washburn first called upon Past President T. S. Hammond who presented

the J. H. Whiting Gold Medal to Donald James Reese, International Nickel Co., New York City. Past President Bornstein was then called upon to present the Wm. H. McFadden Gold Medal to Max Kuniarsky, Lynchburg Foundry Co., Lynchburg, Va. Next, Past President G. H. Clamer presented the John A. Penton Gold Medal to Fred L. Wolf, Ohio Brass Co., Mansfield, O.

At this time, Mr. Washburn called C. E. Hoyt to the rostrum and presented him with a bound volume of letters from past and present officers and directors of the Association and the Joseph S. Seaman medal as follows:

"In connection with the presenting of the Joseph S. Seaman Medal, I have the privilege of presenting this bound volume of letters and photographs inscribed as follows: 'To Charles Edgar Hoyt from present and past officers and directors of the American Foundrymen's Association, May 14, 1941.' This volume is a voluntary expression of regard and appreciation of what Ed Hoyt has given to us personally and to our Association. Its contents speak eloquently for themselves. While we have accepted from you, Ed, more than

we can every repay, we have brought you a wealth of friendship that it is the privilege of few men to possess. We believe this volume will keep green in your memory many of your happiest associations."

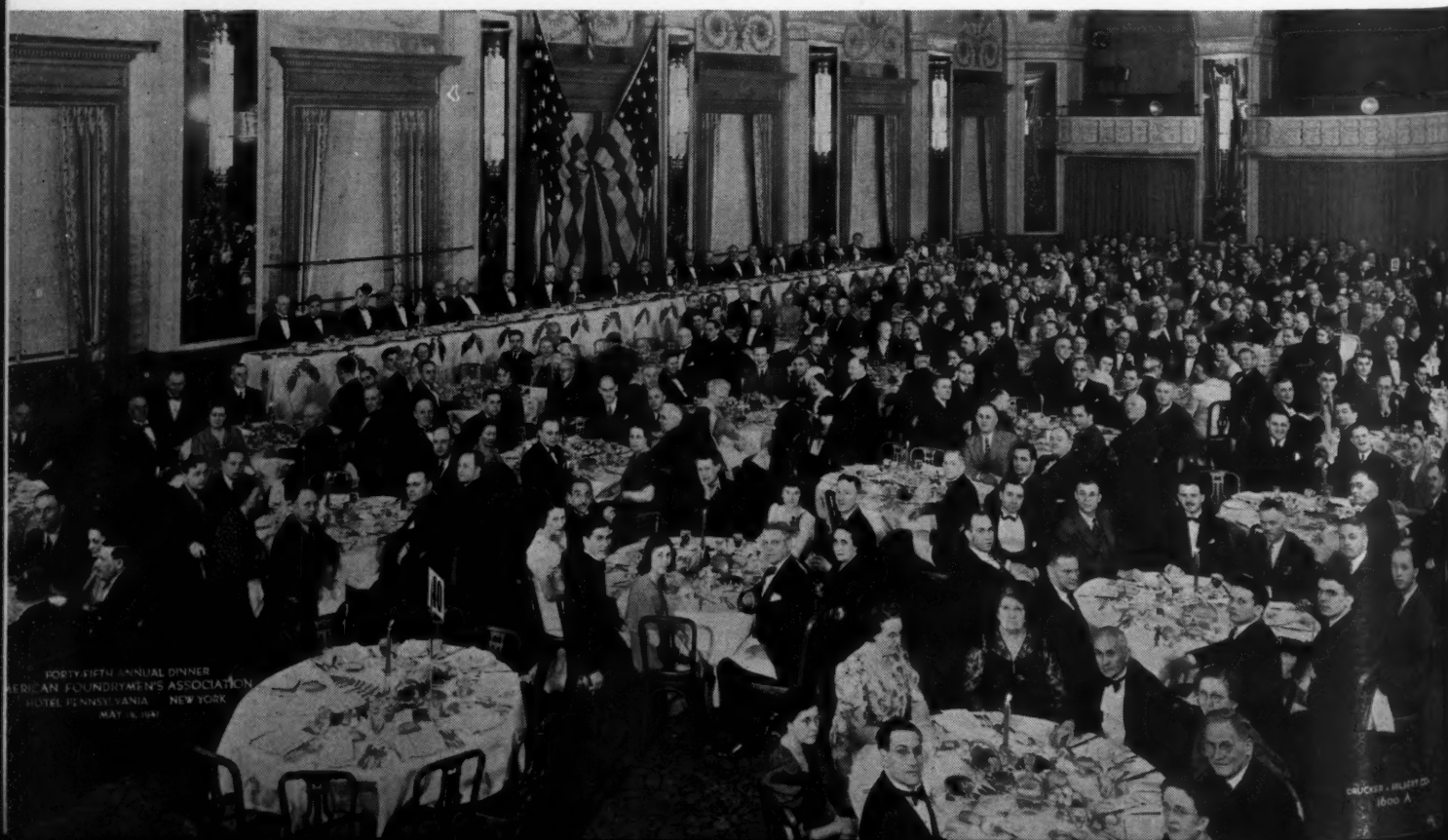
This presentation was greeted with prolonged applause with the audience rising in recognition of appreciation of the great and valued services rendered by Mr. Hoyt to the Association and the foundry and foundry equipment industries.

In accepting the Seaman Medal, Mr. Hoyt, in his unfailingly gracious manner, presented to his staff associates, Miss Jennie Reininga, Assistant Treasurer; Norman F. Hindle, Assistant Secretary; E. O. Jones, Director of Safety and Hygiene, and R. E. Kennedy, Secretary, bronze replicas of the Seaman Gold Medal, acknowledging their assistance to him in his work.

Awards Lecture

As the final event of the meeting, President Shannon introduced as the 1941 awards lecturer, Past President S. Wells Utley, who gave a most inspiring address — "This Industry of Ours"—which is reprinted elsewhere in this issue.

The 1941 Convention Dinner in the Ball Room, Hotel Pennsylvania, New York, Was an Enjoyable Occasion.



Annual Dinner is Leading Social Function of Convention

THE Annual Dinner of the Association, held Wednesday evening, May 14, was one of the most enjoyable ever staged. Expressions of happiness and enjoyment were heard on every side. H. C. Seidel, chairman of the Metropolitan chapter Annual Dinner Committee, and his committee members received praise on all sides for the excellent job they had done in preparing for the event.

During the dinner, several vocal selections were presented by Doris Reed, soprano, and Alfredo Chigi, baritone. Each selection was greeted with applause and cries of "encore." Upon completion of the dinner, President L. N. Shannon welcomed the nearly 600 members and guests and then presented those seated at the speakers' table.

Following the introduction, Thomas Kaveny, Jr., vice president, Foundry Equipment Manufacturers' Association, went to

the speaker's stand and requested C. E. Hoyt, executive vice president of the Association, to approach. Mr. Kaveny, in well chosen words, presented Mr. Hoyt with a beautiful combination radio-phonograph-recorder on behalf of members of the Foundry Equipment Manufacturers' Association, in recognition of their high personal esteem and for his constant improvements in the staging and operation of Foundry Shows.

President Shannon then introduced the speaker of the evening, Dr. Allen A. Stockdale, National Association of Manufacturers, whom President Shannon said he had had the privilege of hearing several times in Birmingham. Dr. Stockdale delivered an enjoyable and forceful address on "What Are We Defending?"

Following the address, those present adjourned to an adjoining room where they danced until the wee hours of the morning.

Publish Second Progress Report on Properties of Sand at High Temperatures

THE Foundry Sand Research committee of A.F.A., through the efforts of its Subcommittee 6b7 on Physical Properties of Steel Foundry Sands at Elevated Temperatures, has published the second report of the progress made in this investigation. This report is available as Preprint 41-10 and is composed of results of expansion and contraction tests on sand mixtures, the other properties of which were recorded in progress report No. 1 issued as Preprint 39-34. The expansion-contraction work on the sands used in the first section of the work of this subcommittee was omitted because, at that time, methods commonly used proved to be unsatisfactory at high temperatures and new apparatus had to be constructed.

The second section of the report deals with the comparison

of specimen sizes for high temperature work. This work was performed by J. R. Young, American Foundrymen's Association research fellow at Cornell University, and was undertaken because two specimens of different sizes, $1\frac{1}{8}$ -in. diameter, 2-in. long and 2-in. in diameter, 2-in. long (standard A.F.A. specimen) were being used in high temperature investigations. The subcommittee decided that the first step was to determine which of these two specimens was the proper one to use and also whether or not a differently designed specimen might not be better than either of the two.

As a result of this work, Subcommittee 6b7 has recommended to the Foundry Sand Research Executive Committee that the $1\frac{1}{8}$ x2-in. specimen be approved

for testing the high temperature properties of foundry sands.

The third section of the report is a paper entitled "Measurement of Free Expansion of Sand Mixtures at High Temperatures" by G. W. Ehrhart, instructor, Experimental Engineering, Cornell University, Ithaca, N. Y. This work was done by Mr. Ehrhart in partial fulfillment of the requirements for a master of science degree. It was necessary for Mr. Ehrhart to develop his apparatus in addition to making the various tests. Mr. Ehrhart also performed the test work in determining the expansion-contraction properties of the mixtures used in the first progress report.

Groundwork Laid

The subcommittee feels that the groundwork now has been laid for securing some concrete, usable information on the high temperature properties of steel foundry sands. Prof. A. C. Davis, head, Experimental Engineering Department, Cornell University, has stated that he expects to have information of considerable practical value for presentation at the 1942 convention.

Personnel of Subcommittee 6b7, under whose direction the high temperature research is being conducted, is as follows:

D. L. Parker, General Electric Co., Everett, Mass., Chairman.

C. W. Briggs, Steel Founders' Society of America, Cleveland, Ohio.

A. C. Davis, Cornell University, Ithaca, N. Y.

H. W. Dietert, Harry W. Dietert Co., Detroit, Mich.

W. Finster, Reading Steel Casting Div., American Chain & Cable Co., Inc., Reading, Pa.

R. A. Gezelius, General Steel Castings Corp., Eddystone, Pa.

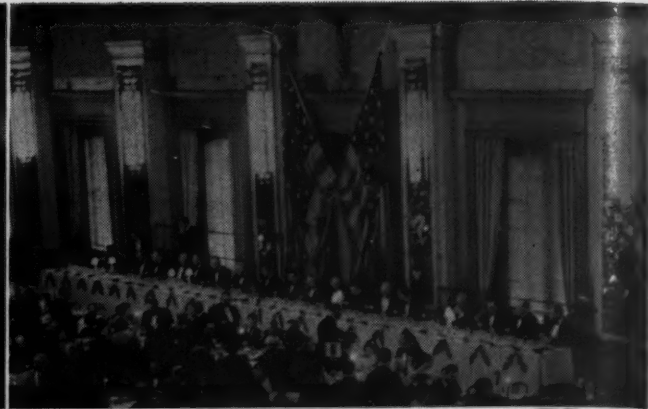
G. A. Lillieqvist, American Steel Foundries, E. Chicago, Ind.

Howard Mason, Symington-Gould Corp., Depew, N. Y.

C. P. Randall, Eastern Clay Products, Inc., Eifort, Ohio.

W. G. Reichert, American Brake Shoe & Foundry Co., Mahwah, N. J.

D. C. Zuege, Sivyer Steel Casting Co., Milwaukee, Wis.



Annual Dinner Groups

(Photos, Courtesy S. N. Farmer, Sand Products Corp., Cleveland)

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This Industry of Ours

Annual Board of Awards Address Presented at
Annual Business Meeting of A.F.A., May 14, 1941

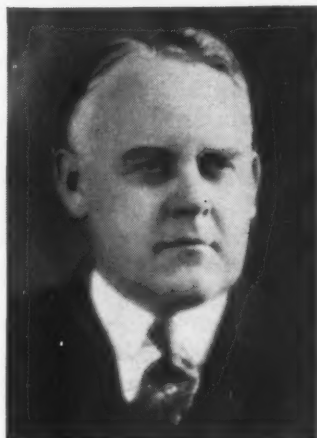
By S. W. Utley*, Detroit, Mich.

I FEEL highly complimented that the past presidents of this Association, constituting the Board of Awards, have asked me to deliver this address. It is both a privilege and a pleasure to again face the members of this Association in whose work I had an active part for many years, and, too, it is both a comfort and a challenge to address an audience composed of men of the industry in which one has spent his life, men who face the same problems, think the same thoughts, speak the same language. The avenues of approach to mental understanding are much straighter than when one talks to those who, because of different thought processes, brought about by different avocations, approach a subject from many different angles.

The History of Our Industry

Some years ago, when I sat thinking about this business which is so dear to all of us, and yet about which I sometimes think we know so little, I began to wonder just how far back the foundry industry went in the story of the world. So I turned to the *Encyclopedia Britannica* to try to follow the trail of the foundry as it led back through the story of the race. I found that for the first few generations it was a broad and well developed boulevard, which led us back through the Middle Ages, back through the Roman Empire, back through the period of Grecian civilization, and then narrowing down somewhat, led us into the days of Egyptian civilization, past the days of the Pharaohs, past the days of the pyramids, past the point where man first learned to weave textiles and make garments for himself, past the point where he first learned to make pottery. Then a straggling and difficult

trail to follow, it led on to the point where the frontiers of human knowledge draw the veil of oblivion across the path of history and where man reads the story of prehistoric times only in the faces of the stones, and where he reckons time, not in



S. Wells Utley

STUART WELLS UTLEY, who delivered the Annual Board of Awards Lecture at the 1941 New York Convention, is the first such lecturer to be chosen by the Board of Awards from our own industry. Mr. Utley is president, Detroit Steel Castings Co., Detroit, Mich.

It is interesting to note that practically his entire industrial career has been in the foundry industry for shortly following his graduation from the University of Michigan in 1902, he became connected with the American Radiator Company, Detroit. After three years, he entered the employ of the Detroit Steel Castings Co., Detroit, as a cost clerk. In recognition of his ability, he became successively, purchasing agent, assistant secretary, secretary, vice president and general manager, and finally president, the position he now holds.

Mr. Utley long has been active in the work of the Association. In 1925, he was chosen as vice president and served as president in 1926-1927. In addition, he has been interested in the work of the American Iron and Steel Institute, Detroit Engineering Society, is a past president of the Employers' Association of Detroit and a past officer of the Michigan Manufacturers' Association and the Detroit Board of Commerce.

In recent years, Mr. Utley has made an extensive study of economics and has talked and written on this subject. He is recognized as an outstanding industrialist and is in demand as a speaker on a wide variety of subjects of interest to the industry.

years or centuries, but only in Ages. For the encyclopedia tells us that there is undisputed evidence that man first made molds and poured molten metal into them not later than the middle of the Neolithic Age, the period of the Smooth Stone Era. Six thousand, seven thousand, maybe eight thousand years ago, man first made molds and thus started our industry. It stands today older than science; older, perhaps, than art; older than any system of philosophy we have; older than any religion that remains on the earth today.

For What Are We Living?

In these days, when so many people who class themselves as intellectuals chide us with the fact that ours is a materialistic age and seem to infer that we are traveling on a lower plane than we might if we thought less of material things and more of something else, the details of which, however, they fail to specify, have you ever stopped to wonder what is the purpose of our civilization? For what, after all, are we living? Surely it can't be that the race today lives simply to make molds or make buildings or make automobiles or anything else.

Is the object of our civilization to develop a great brain so that some man can think great thoughts? If it is, we have no evidence that the best brain of this generation surpasses in any way the best brain of five thousand years ago, and we know of no system of philosophy which has been given to us by recent generations anywhere so significant as that of the ancients.

Is it that we may bring forth great artists to make beautiful statues or beautiful buildings? No buildings have been built in the Twentieth Century so beautiful as those of the ancient Greeks, nor probably of so enduring a character. No statues

*President, Detroit Steel Casting Co., and Past President of A.F.A.

have been chiseled that even rival the work of their great artists.

Is the object of our civilization to bring forth some new idea of the relationship of man to his God? There has not been a single new worth-while contribution to religion in almost two thousand years. If we are to measure the progress of the human race by its intellectual development, it seems to me that we must come to the conclusion that the race reached its apex at about the time that we began to write our history, and that since then, practically speaking, there has been no development along these lines.

Industrial Civilization Values Life

The civilization of Greece, with all its beauty, with all its art; the civilization of Rome, with all the great things that it left to us, the flashes of advancement which we sometimes see during the Middle Ages, were builded upon the foundation of one of the most abject systems of slavery that the world has ever known. The great masses of men, white, black or yellow, were born, lived and died that a few might become immortal. Even today, you will find that it is only in those places where industrial development has reached a high type that human life is considered of relatively more value than that of the animals. It is only when man, seizing the forces of nature, harnesses them to a machine so that the machine may do the work of his hands multiplied many times, that life itself becomes of any real value to society.

Look at the great non-industrial areas of the earth; at China, where the penalty for the theft of a chicken is the execution of the thief. Look at India, where but recently human sacrifice has ceased to be. Look at Africa, where if a man on the trail in the caravan falls sick by the wayside, his companions leave him to die and become the prey of the animals of the jungle without apparently the slightest regret. If you go throughout the entire world you can gauge the value of human life by the stage

which has been reached in industrial development and, shocking as it may seem, only in highly developed industrial regions does society seemingly place such a value on human life.

Industry and Progress

I take it, then, that the measure of human progress, the measure by which we have to gauge the difference between the centuries just passed and those of ancient times, is not the status of the isolated individual, but rather the amount by which the condition of the great multitude has been raised by the increase in prosperity, leisure and opportunity for happiness; by the increased facility the average man has for improving the position of those whom he loves and who are dependent upon him. If this be the measure of progress, then industry, of which we are all a part, has had more to do with progress than any other one factor.

If this be true, what is the position of our own calling in this picture? When we make a mold, pour some metal into it, take it down to the cleaning room and turn out a finished casting, we have made something which is absolutely new. The pattern may be old, the design may be ancient, but the thing we have produced never existed before. When the whistles of our foundries blow tonight, the world will be richer than it was when the sun rose this morning by the difference between the cost of our product and its value to the race. We in the foundry are not rehashing that which has been, we are creating something that is new, something to help the future of mankind.

Notwithstanding that we are so old, we are coming to realize that our industry is so complicated that we know little or nothing about it. Any man who handles molten metal is daily confronted with problems which tax his utmost ingenuity. A few years ago we used to gauge pig iron by its fracture. Then we called in the chemist, only to find that he did not tell us the whole story. Spurred on by the demands of society for a better and better product, we turned to

the microscope and to instruments of which our fathers knew nothing. With these we began to explore our sands, our facings, our metals, only to find undreamed of mysteries, challenging our intellect and our ingenuity and demanding redoubled efforts for their solution.

Why A.F.A. Was Organized

This Association was born forty-five years ago in Philadelphia. It is perhaps significant that being one of the oldest industries in the world, this was one of the first great National Associations organized in this country, and doubly significant that the ten years which followed and which marked the organization of most of our great national associations also marked the close of the century brought in by the French Revolution, whose dominant philosophy was the supremacy of the individual. Some day we shall realize that the first quarter of this century spelled an Epoch in the story of mankind, marking as it did the willingness on the part of the individual to sacrifice something of his own personal freedom in order that he might, by voluntary co-operation with others, enrich his own experience and promote the general welfare. And I suspect that the historian of the future will find that the greatest tragedy in the entire life of this people is that we have failed to learn the lesson of that spirit of co-operation, and have, in no small measure, relinquished individual liberty as developed by American people on American soil in favor of autocratic government.

This Association was born because men realized that progress was faster when men in an industry helped each other, rather than plodded on alone. It was born because men began to see that no matter how much an individual thought he knew about the technical side of his own business, there was always someone who could tell him something which would be of advantage to him. It was born because the industry realized that with the tremendous problems before it, the only way these could pos-

AMERICAN FOUNDRYMAN

sibly be solved was by massing the best ability and the best brains for the attack. For after everything else has been said, the real object of this organization is simply to learn from nature her closely guarded truths.

During the years that have passed, we as individuals have come to understand much of the material side of our world, but less about the spiritual side; much about the laws of nature as applied to iron and steel, but far less about these laws when applied to man.

Why Does Man Work?

If you and I were to go into a power plant and I asked you what makes a reciprocating engine or turbine work, you would instantly reply that it is the expansion of an invisible gas called steam; if I pointed to a Diesel or a gas engine you would again tell me that it was the expansive power of gas released by controlled explosion; if I indicated a motor you would tell me of strange lines of force, invisibly going through the atmosphere, created by an unknown agency called electricity; but if I asked you what made a human being operate and produce work, you would stumble and falter. True, you might talk of nervous energy, muscular activity, metabolism and the like, but these are beside the point, for what we are seeking is the mystery behind brain action. *Why* does man show initiative, *why* does he think, *why* does he act, *why* does he dare? Why does he brave the cold of winter, the heat of summer, the perils of the sea, driving himself when he fain would rest, striving to do that which seems impossible? After all, the material progress of a nation or a race, the thing we call an advancing standard of living, depends upon being able to overcome man's natural indolence and stimulate his mental processes.

We think of man as a selfish creature devoted exclusively to the advancement of his own interest. We are prone to forget that almost universally he is likewise a generous creature, but that this generosity does not

manifest itself equally toward all people. He is most generous toward his wife and his children, his father and mother, his brothers and sisters, he is less generous toward his more distant relatives and his generosity normally vanishes when applied to those whom he knows only casually, or those whom he has never seen. We seem to have this strange paradox, that in most cases he is selfish primarily in order that he may be generous; he craves possessions in order that he may the better give them to those within the scope of his generosity. He never gives up his life for his own selfish interests; he often sacrifices it for the benefit of those he loves. Viewed in this light, the so-called vice of selfishness takes on a new aspect.

About one hundred and seventy-five years ago James Watt discovered that if we inject steam into a device called an engine, its expansive power will perform useful work. For countless centuries nature, through the volcano, the geyser and the hot spring, had been trying to impart this secret to dumb human beings. This canny Scot was the first to recognize the principle, and his followers, by improving its application, have created the wonderful machinery of our industrial age.

The Driving Force

Twelve years later a professor of moral philosophy, Adam Smith, as he reviewed the field of human endeavor in the centuries past, discovered that selfishness, or self-interest to use a better term, was the force which best stimulated the human brain, that *it was the steam that made men work*. He found that man could be induced to think to better advantage, to work longer and harder, to produce far more for society, if he were allowed to share in the results achieved by his efforts. He found that production of the good things of life was tremendously stimulated if the individual were made a free man, instead of a creature of the State, and if, instead of being *made* to work by outside force, he was *lead* to work by the hope of reward or achievement.

Hope and Fear

Man, and this seems to be true of the entire animal kingdom, is activated in his economic life primarily by two spiritual influences; first, a *hope* that he may improve his own position by making money, by achieving power, by a feeling of satisfaction due to performing a duty, by a sense of accomplishment and many other things; and, second, a fear that unless he exerts himself he cannot maintain the position already attained—fear of loss of money, loss of prestige, loss of position, and finally, loss of life itself. Hope is the more powerful, for it buoys one up, stimulates thought and imagination, gives additional power to body and mind, while fear discourages and depresses.

Up to a relatively few years ago, fear was practically the only motive power which drove the human mind. The fear of the slave, both white and black, of punishment from his master; the fear of the captive, as he was led in chains as a result of military conquest; the fear of the subject, as he contemplated the Divine Rights and powers of the king; the fear of the serf of the anger of the landowner; fear of starvation, fear of punishment, fear of murder by the power of the State—these were the things which drove man to his work. Under this stimulus, or lack of stimulus, as we should say today, society made no progress in six thousand years, and the circumstances of men up to the middle of the eighteenth century were little different from those of his ancestors in the days of ancient Babylon.

The Capitalistic System

With the coming of the so-called capitalistic system, man's relationship underwent certain radical changes. Under the doctrine that the State possessed only such powers as the people delegated to it, that it was an institution of laws instead of capricious men, the individual largely lost his fear of the State, and that fear ceased to act as a mental stimulant, or a mental inhibitor, as the case may be. These were to some extent replaced by

new fears, but, as we shall see, these were of a different nature. But the *great difference* was that the new system added a second powerful driving force, which had previously been absent, or present only to a very limited extent. Under the doctrine of free men, *hope* was added to fear as a powerful mental stimulant; hope that if a man rendered a service he would receive a reward for it, hope that if he ventured in business he would make a profit, hope that if he loaned money to someone else he would receive interest for it, hope that if he did his job well he would receive an advance in pay or a promotion. It extended far beyond the monetary field, for the hope of position, the hope of acclaim, the hope of power, the knowledge of a duty properly performed, and the feeling of satisfaction incident to providing for loved ones, are all things which stimulate the minds of men to work under a system of free enterprise.

True, man was still haunted by certain fears; the fear of failure, the fear of the loss of his business or his job, the fear of hunger, the fear of countless other things. But these were things that were largely within his own control, and not something imposed by the State. Most of them he might avoid, by taking off his coat, by pulling in his belt, by better planning and harder work. They all acted as a stimulant to renewed effort, not as a millstone tied around his neck.

Mechanical Power—The Servant

Hope of profit, either material or spiritual, fear of loss, either of money or of position; a stimulant to the ambitious, a spur to the laggard. Mechanical power to multiply man's strength, and absence of class strata, so that there was no limit to man's possibilities, and in a century and a half our people have made more progress, and by progress I mean the constantly increasing share of more and more people in more and more of the good things of life than was made in all previous time. The difference between the lot of man today and in the days of my great-

grandfather is greater than the difference between that of those of his time and the ancient Assyrians. Of the wealth of our world today, ninety-five per cent is the product of the last one hundred and fifty years.

If someone in the power house were gradually to close the throttle by which steam is admitted to the turbine, we should not be surprised that the motors began to slow down, that the elevators ceased to run, and our lights lost their brilliancy. Nor should we be surprised to find that when we weaken the stimuli which control our mental processes, our economic machine likewise falters, that the production curve ceases to stay up, and unemployment fails to vanish.

Man Is Master of His Destiny

For upwards of a quarter of a century, and more especially during the last eight years, we have seen many of our fellow citizens endeavoring in every way possible to destroy the incentives which have been the touchstone of our progress. More and more we have surrendered our rights as individuals to Government. More and more the Central Government has taken over the rights of the States and local communities. The freedom of the individual to manage his own life has been edged-about by constantly increasing restrictions, the rewards for initiative and daring have been constantly decreasing, while life has been made easier for the lazy and improvident. Most of us as corporate executives are working for Government, in that more of the product of our labor is paid out in taxes than is paid to stockholders or used in strengthening the business. A decrease in the chances of reward has decreased the "hope" of the ambitious; a decrease in the penalty for failure has lessened the "fear" of the indolent. No man up to thirty years of age has ever had any business experience under the old American way of life. No wonder that for the first time in our history a decade has closed with the national wealth appreciably lower than at its beginning, and with no single year in which the

national income has equaled that of the best year in the preceding decade. We have set up an absolutely new record for this land of ours, for more than two years we have gone backward rather than forward. And we shall continue to do so unless we again enthrone man, and not the State, as the master of his individual destiny.

Civilization Rests on Productive Industry

But after all, it's a wonderful thing to be connected with a great industry. No civilization has ever existed which didn't rest upon the achievements of productive industry. Go back to Babylon and Assyria, Ancient Egypt, Tyre and Sidon, Carthage and the Phoenicians, the halcyon days of Greece and Rome, the glories of the Renaissance and the Italian Free State and the modern states which have come after them, and the story is all the same. The surplus produced by industry paid for art and architecture, for poetry and music and drama. That surplus, plus the tools and instruments that industry has provided is responsible for modern science in all its developments, for modern schools and education, for medical science and medical research, together with all the other things which differentiate our lives from the lives of our ancestors. And so I say it is a wonderful thing to be connected with industry in this great industrial country where each man is honestly trying to make money for himself and those dependent upon him, conscious, however, that the only way in which he can attain this goal is by rendering to society the service by which he gives her more than he gets back. It is a wonderful thing to be connected with an industry which is so old that you cannot find where it began, and yet which is so young, so inexperienced, so unknown, that it challenges the best of our executive ability, the best of our engineering skill, the best of our scientific research. It is a significant thing to be connected with a great organization of this kind, where men are meeting to-

(Concluded on Page 18)

AMERICAN FOUNDRYMAN

Winners Named in National Apprentice Contest at New York

THERE is a saying that success breeds success, and this certainly can be applied to the efforts of the A.F.A. Apprentice Training Committee, which stages annually competitions in gray iron, steel and non-ferrous molding and patternmaking. Each year, since the first competition was started at the Milwaukee convention in 1924, competition has become keener, not only due to the high standard of workmanship that has been established by the numerous apprentices participating from all sections of the country, but also due to the increase in the number of participants.

That this apprenticeship contest is of interest to men in the industry is indicated by the fact that literally hundreds of foundrymen who attend each convention inspect and discuss the relative merits of the different entries. The apprentice display at the 1941 convention was no exception. Great interest was indicated in the entries in the competition by plant executives in attendance.

A.F.A. Apprentice Work Recognized

The work of the A.F.A. Apprentice Training Committee has received national recognition by the fact that W. F. Patterson, Chief of Apprenticeship, Division of Labor Standards, Washington, D. C., in his talk at the meeting on apprentice training on Tuesday, May 13, stated that the American Foundrymen's Association has been more active in apprentice training work than any other association. Coming from a man who has spent his entire life in the apprentice training field and who now directs the national government's efforts in apprentice training, this is high praise indeed.

This year there were nearly 200 individual entries throughout the country in the apprentice contest. Many competitions were held in individual plants, but in several chapter areas the chapters sponsored area competitions and the prize entries in these contests were forwarded to New York for judging. Local competitions were held by the St. Louis District, Northeastern Ohio,

Wisconsin and Quad-City chapters. Although the Quad-City chapter area placed no winners in the 1941 contest, this is the first time for several years that they have not done so. This area has an enviable reputation in its apprentice training work.

Winners in the 1941 contest are as follows:

Gray Iron Molding

- 1st—Henry L. White, Brown & Sharpe Mfg. Co., Providence, R. I.
- 2nd—Chester Blacksmith, Bowler Foundry Co., Cleveland, Ohio.
- 3rd—Burton Bevis, Caterpillar Tractor Co., Peoria, Ill.

Steel Molding

- 1st—Bob Bina, Crucible Steel Casting Co., Cleveland, Ohio.
- 2nd—H. Novak, Maynard Electric Steel Casting Co., Milwaukee, Wis.
- 3rd—Pierre McMullen, Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.

Non-Ferrous Molding

- 1st—Tony Ivancich, Standard Brass Works, Milwaukee, Wis.
- 2nd—John Jasso, Wellman Bronze & Aluminum Co., Cleveland, Ohio.
- 3rd—Kenneth Zinda, Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Patternmaking

- 1st—John Burczyk, Mastern Pattern Co., Cleveland, Ohio.
- 2nd—Arthur Sirevoog, Miehle Printing Press & Mfg. Co., Chicago, Ill.
- 3rd—Albert Jazbinski, Western Pattern Works, Cleveland, Ohio.

Names of men who acted as judges of the various contests and to whom the Association wishes to extend its sincere thanks for their excellent co-operation are as follows:

Gray Iron Division

W. E. Day, Jr., Chief Met., Mack Mfg. Co., New Brunswick, N. J.

Patterns and Castings Entered in National Apprentice Contest Sponsored by A.F.A. Apprentice Training Committee.



Horace A. Deane, Asst. Mgr., American Brake Shoe & Foundry Co., Mahwah, N. J.
Walter O. Moyer, Fdry. Mgr., Otis Elevator Co., Yonkers, N. Y.

Steel Division

R. S. Munson, Vice. Pres., Atlantic Steel Casting Co., Chester, Pa.
H. D. Phillips, Plant Mgr., Lebanon Steel Foundry, Lebanon, Pa.
Karl V. Wheeler, Vice Pres., American Steel Castings Co., Newark, N. J.

Non-Ferrous Division

D. E. Broggi, Asst. Factory Mgr., Neptune Meter Co., Long Island City, N. Y.

John A. Marsh, Supt., Fdry. Div., International Nickel Co., Bayonne, N. J.

Pattern Division

J. H. Jackson, Supt., Pattern Div., Worthington Pump and Machinery Corp., Harrison, N. J.
John Sherer, Supt., Pattern Div., Mack Mfg. Co., New Brunswick, N. J.
Harry Rubovitz, Pres., Newark Pattern Works, Newark, N. J.

First, second and third place winners in each division have received cash awards of \$30, \$20 and \$10, respectively, and certificates. These cash awards are made possible by the Board of Awards.

Chapter Delegate Conference Discusses Many Activities

THE annual chapter conference of delegates from the twenty A.F.A. chapters located throughout the United States, convened at 3:00 p.m. Monday, May 12, in the MADhattan room, Hotel Pennsylvania, for the purpose of comparing experiences. Vice President Simpson presided. Planned discussions on various topics thought to be of greatest interest to the various chapters were presented. This annual chapter delegate conference provides an opportunity for the various chapters to discuss their mutual problems and to secure ideas which have been particularly successful in certain chapter undertakings.

Discuss Various Activities

Following the roll call, at which each delegate was introduced, giving his name, chapter and firm connection, and if an officer, which office he held, the first of the planned discussions was presented by B. D. Claffey, chairman, Wisconsin Chapter and director of A.F.A. He spoke on "How We Secured 100 New Members During the Membership Drive." E. O. Jones, A.F.A. Director of Safety and Hygiene, and secretary, National Membership committee, discussed "Continuing Normal Membership Drive and Following Up Delinquents." J. W. Kelin, secretary-treasurer, St. Louis Chapter, explained "Why Our First Educational Course Was a Success." He was followed by F. Ray Fleig, chairman, North-

eastern Ohio Chapter, who discussed "Building Up Chapter Finances." "Our Extension Meetings—How They Are Organized and What They Can Do" was discussed by Art Allen, secretary, Detroit Chapter.

Two of the most successful regional conferences held each



Rufus Harrington in a Contemplative Mood.

year are those staged by the Wisconsin and Birmingham District Chapters. A. C. Ziebell, vice chairman, Wisconsin Chapter, discussed "Organizing a Regional Meeting," while J. A. Bowers, vice chairman, Birmingham District Chapter, explained "Why We Keep Our Southern Regional Conference as a Permanent Feature of the Chapter Year."

So that chapter officers might have an idea of the conditions under which a chapter operates during a war period, D. M.

Storie, chairman, Ontario Chapter, discussed "A Chapter Under War-Time Conditions—What It Does and Can Do."

Building chapter programs and method of handling meeting notices, together with conduct at chapter meetings, is an important function and was discussed by L. L. Henkel, chairman-elect, Chicago Chapter, in his talk on "Building Up Chapter Programs and Handling Meeting Notices."

The Birmingham District Chapter has been very successful in securing publicity in local papers, and for this reason, W. O. McMahon, chairman, Birmingham District Chapter, explained "Getting Publicity on Chapter Activities in Local Papers."

Following the presentation and discussion of these topics, the meeting adjourned to the Keystone room where the chapter officers' dinner was served. Following the dinner, at which Vice President H. S. Simpson presided, first, second and third place trophies in the recent membership contest were presented by President L. N. Shannon. Winners of the trophies were: First place, Wisconsin Chapter; second place, Southern California Chapter; third place, Chesapeake Chapter. The trophies were accepted by B. D. Claffey, chairman, Wisconsin Chapter; J. E. Wilson, Southern California Chapter; E. W. Horlebein, chairman, Chesapeake Chapter. In presenting the trophies, President Shannon commented on the good work and excellent cooperation afforded the Association during the membership drive.

CHAPTER OFFICERS



F. J. Dost
Sterling Foundry Co.,
Wellington, O.
1940-41 Vice Chairman
Northeastern Ohio
Chapter



R. W. Mattison
Mattison Machine Works,
Rockford, Ill.
1940-41 Secretary-Treasurer
Northern Illinois-Southern
Wisconsin Chapter



Henry M. Wood
W. W. Sly Mfg. Co.,
Cincinnati, O.
1940-41 Secretary
Cincinnati District Chapter



A. H. Allen
"The Foundry," Detroit, Mich.
1940-41 Secretary
Detroit Chapter



R. J. Keeley
Ajax Metal Co., Philadelphia, Pa.
1940-41 Chairman
Philadelphia Chapter

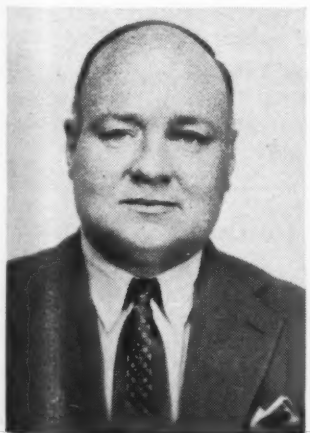
R. J. Keeley
Philadelphia Chapter
Chapter Chairman of the Philadelphia chapter is R. J. Keeley, metallurgist, Ajax Metal Co., Philadelphia, Pa. Born in Oxford, Pa., Mr. Keeley attended the elementary schools of that city. He later went to Central High School, Philadelphia, where he took a course in chemistry under the late Dr. Harry F. Kellar, professor in chemistry.

Mr. Keeley became affiliated with the Ajax Metal Co. in 1905 as assistant chemist. In 1910, he was appointed chief chemist and held that position until 1925, when he assumed his present position as metallurgist. Mr. Keeley has prepared and read various papers before A.F.A. groups pertaining chiefly to non-ferrous melting and foundry practice.

Beside his membership in the American Foundrymen's Association, Mr. Keeley is also a member of A.I.M.E.



J. P. Lentz
International Harvester Co., Indianapolis, Ind.
1940-41 Treasurer
Central Indiana Chapter



W. F. Haggman
Foundry Specialties Co., Huntington Park, Calif.
1940-41 Secretary
Southern California Chapter



Eliot Armstrong
Inter-Allied Foundries, Buffalo, New York
1940-41 Secretary
Western New York Chapter



R. A. Thompson
Electric Steel Castings Co., Indianapolis, Ind.
1940-41 Secretary
Central Indiana Chapter



B. F. Lambert
Diamond Alkali Co., Cleveland, Ohio
1940-41 Secretary
Northeastern Ohio Chapter

April is Record Month in Membership Drive

ANOTHER record smashed—one hundred twenty-seven (127) new members in April, which, added to those received previously, makes a total of 797 new members received up until May 1.

The Hambley Hustlers of the Wisconsin chapter sent in 14 new members to retain first place in the membership drive with a total of 2,195 points. Chesapeake chapter kept the pressure on, sending in 11 new members to retain second place with a total of 1,865 points. These two chapters are still running neck and neck with 89 and 90 new members, respectively.

The Chicago chapter proved to be the dark horse this month. Their efforts resulted in 17 new members and 7 sustaining members for a total of 1,655 points, or enough to move up from eleventh to third place. Quad City also had a field day, sending in

New Members Enrolled in Chapters

From July 1, 1940, to April 30, 1941

Place	Chapter	Sus- taining	Com- pany	Affil- iate	Per- sonal	New Members April	Total New Members	Total Points
1st	Wisconsin	1	17	61	11	14	89	2195
2nd	Chesapeake	1	8	71	10	11	90	1865
3rd	Chicago	8	3	35	6	17	44	1655
4th	Northeastern Ohio	1	10	34	9	11	53	1385
5th	Southern California	0	6	23	12	5	41	1005
6th	Western New York	0	5	23	8	3	36	835
7th	Metropolitan	0	3	24	10	3	37	810
8th	Central New York	1	3	34	1	2	39	790
9th	Detroit	0	3	17	8	4	28	645
10th	Ontario	0	9	5	3	3	17	615
11th	Quad City	0	4	22	1	13	27	560
12th	St. Louis	0	2	6	12	1	20	550
13th	Birmingham	0	1	20	3	3	24	440
14th	Central Indiana	0	3	14	2	3	19	420
15th	Cincinnati	0	5	7	2	3	14	415
16th	Northern California	0	0	12	6	0	18	360
17th	Philadelphia	0	1	13	2	1	16	305
18th	Western Michigan	0	2	12	0	8	14	280
19th	Michigan	0	1	6	3	1	10	230
20th	Nor. Illinois-Sou. Wisconsin	0	1	1	0	0	2	65
Chapters		12	87	440	109	106	636	15425
Outside of Chapters		---	---	---	---	6	107	---
Student and Apprentice		---	---	---	---	15	54	---
New Members, April						127	---	---
Total New Members, June 30, '40, to April 30, '41						---	797	---

Points Awarded on Memberships

Sustaining	100	Personal	30
Company	50	Affiliate and Associate	15

Flash!

NEW YORK, May 12—(Special)—(A.F.A.)—Only 75 points separated the winners of first and second place in the A.F.A. National Membership Contest. BAILEY'S BIRD DOGS of the Southern California chapter sent by air mail 61 new members, which arrived the day be-



THE WINNAHS!

Left to Right—J. E. Wilson, B. D. Claffey and E. W. Horlebein with Second, First and Third Place Trophies, respectively, which they accepted on behalf of the Southern California, Wisconsin and Chesapeake Chapters, respectively. Mr. Claffey is chairman of the Wisconsin chapter and Mr. Horlebein of the Chesapeake chapter.

fore the drive ended—almost enough points to take over first place from HAMBLEY'S HUSTLERS of the Wiscon-

sin chapter. COVINGTON'S MARINERS of the Chesapeake chapter, who kept the race going right from the first gun, placed third.

The trophies which were presented by H. S. Simpson, president-elect and national chairman of the membership committee, were awarded to the winning chapters by President Shannon at the chapter banquet in New York this evening. Ben Claffey, president of the Wisconsin chapter, accepted the first place trophy for the Wisconsin chapter (and, incidentally, also collected a few bets). J. F. Brunner, Jr., and John E. Wilson accepted the second place trophy for Southern California chapter. (Someone remarked that if the sun had come out a little earlier in California this spring the race wouldn't even have been close.) E. W. Horlebein, chairman of the Chesapeake chapter, accepted the third place trophy for the Chesapeake chapter. The name of the Chesapeake chapter is engraved a number of times on each of the trophies, which will serve as a constant reminder to the other winners of the good sportsmanship and leadership which Chesapeake chapter provided during this membership contest.

The Chicago chapter, up to the last few days of the race, was in third place. Bruce SIMPSON'S RUSTLERS kept pitching right up to the last minute. There were only 100 points between third and fourth place.

Over 900 new members were enrolled during this contest, a new record. A complete resume will be published in next month's American Foundryman.

13 new members to move from fifteenth place to eleventh place. Northeastern Ohio sent in 11 new members for a total of 1,385 points.

While the above mentioned chapters accumulated 53 new members in April, we do not wish to minimize the record made in April and in the preceding months by all of the chapters. This splendid co-operation which all extended in our efforts to increase the membership in A.F.A. has been wonderful, especially so when we realize how strenuous your every day is at the present time.

The contest closed on the evening of May 10th.

This Industry of Ours

(Concluded from Page 14)

gether, each one to help himself by helping his competitors, where men are willing to devote their time, their work and their money in an effort to make of their industry an instrument which shall be of greater worth to the world, and produce more of happiness for the children of God.

AMERICAN FOUNDRYMAN

NEW MEMBERS

(April 18 to May 19, 1941)

Records fall month after month in the membership drive. In April, 137 new members were reported. This month we report 187 new members, a new high in members enrolled in one month. Southern California chapter with 61 new members upset the dope bucket. For spot news on the chapter winners of the membership contest, see page 18

Conversions

Sustaining from Company

Ampco Metal, Inc., Milwaukee, Wis. (G. K. Dreher, Plant Mgr.)
Barker Foundry Supply Co., Los Angeles, Calif. (A. M. Barker, Mgr.)
Chicago Steel Foundry Co., Chicago, Ill. (David Evans, Pres.)
Electric Steel Castings Co., Indianapolis, Ind. (I. R. Wagner, Vice Pres.)
Griffin Wheel Co., Chicago, Ill. (Henry W. Ufer, Div. Supt.)
Hydro-Blast Corp., Chicago, Ill. (Ronald Webster, Vice Pres. and Gen. Mgr.)
Illinois Clay Products Co., Joliet, Ill. (Otis L. Jones, Pres.)
Link-Belt Co., Chicago, Ill. (E. L. Berry, Gen'l. Supt.)
National Malleable & Steel Castings Co., Cicero, Ill. (J. O. Houze, Mgr.)
Woodruff & Edwards Co., Elgin, Ill. (A. D. Edwards, Pres.)

Company from Personal

Crown Pattern Works, Alhambra, Calif. (F. W. Beick, Partner)
Maryland Car Wheel Co., Baltimore, Md. (John W. Greenstreet, Supt.)

Birmingham Chapter

J. T. Madderra, Apprentice, Miller Foundry Co., Birmingham, Ala.
F. M. Wittlinger, Sec'y, Texas Electric Steel Casting Co., Houston, Texas

Central New York Chapter

Andrew L. King, Fdry. Foreman, Morse Chain Co., Ithaca, N. Y.

Chesapeake Chapter

W. T. Beatty, Baltimore, Md., Sales Repr., Geo. F. Pettinos, Inc., Philadelphia, Pa.
John E. Brooks, Machinist, Bethlehem Steel Co., Sparrows Point, Md.
W. H. Burroughs, Fdry. Apprentice, Washington Navy Yard, Washington, D. C.
J. R. Cardwell, Supt., Maryland Sanitary Mfg. Corp., Baltimore, Md.
Wm. Chenoweth, Foreman, Monarch Engineering & Mfg. Co., Baltimore, Md.
Perry L. Flinchum, Foundry Rubber Compounds Corp., Washington, D. C.
*Foundry Rubber Compounds Corp., Washington, D. C. (Milton J. Kibler, Sec'y-Treas.)
Richardson S. Gladden, Fdry. Apprentice, Washington Navy Yard, Washington, D. C.
Edward W. Hatch, Fdry. Apprentice, Norfolk Navy Yard, Portsmouth, Va.
Alfred H. Hesse, Naval Research Laboratory, Anacostia Station, Washington, D. C.
Chas. Hill, Mgr., Monarch Engineering & Mfg. Co., Baltimore, Md.
Wm. E. Penn, Supv., Newport News Shipbuilding & Drydock Co., Newport News, Va.
Bernard Rafal, Apprentice Molder, Norfolk Navy Yard, Portsmouth, Va.
William G. Robinson, Molder, Washington Navy Yard, Washington, D. C.
Donald A. Roemer, Foreman-Patt. Making, The Balmar Corp., Baltimore, Md.
Robert F. Spinney, Apprentice Molder, Norfolk Navy Yard, Washington, D. C.
Chas. E. Stanford, Molder, Washington Navy Yard, Washington, D. C.

*Company.

C. W. Thompson, Salesman, New Jersey Silica Sand Co., Millville, N. J.
Carl H. Tillmann, Apprentice Molder, Norfolk Navy Yard, Portsmouth, Va.
Harry A. Trebing, Baltimore, Md., The Smith Facing & Supply Co., Cleveland, Ohio.
James F. Turner, Jr., Sec'y, Flynn & Emrich Co., Baltimore, Md.
*Harry C. Weiskittel Co., Baltimore, Md. (Anton K. Weiskittel, Vice Pres.)

Chicago Chapter

G. P. Burks, Chief Chemist, Carnegie-Illinois Steel Corp., Gary Works, Gary, Ind.
*Carnegie-Illinois Steel Corp., Gary Works, Gary, Ind. (P. V. Martin, Ass't Div. Supt., Coke Plant and Blast Furnaces)
Fred Eberhardt, Pres., Eberhardt & Wagner Brass Foundry, Chicago, Ill.
Fred W. Fuller, National Engineering Co., Chicago, Ill.
F. A. Hagedorn, Coke Oven Supt., Interlake Iron Corp., Chicago, Ill.
Andy Hayes, Patt. Foreman, Whiting Corp., Harvey, Ill.
Richard E. Jacobs, Sales, Whiting Corp., Harvey, Ill.
C. V. Lauer, Ass't Supt., Blast Furnaces, Carnegie-Illinois Steel Corp., Gary, Ind.
W. Robert Miller, Met., Indiana Steel Products Co., Valparaiso, Ind.
Everett J. Nansen, Timestudy Engr., American Steel Foundries, Indiana Harbor, Ind.
J. C. Peirce, Sales Mgr., Hydro-Blast Corp., Chicago, Ill.
Wm. Riddle, Gen'l Fdry. Foreman, Carnegie-Illinois Steel Corp., Gary, Ind.
Raymond H. Schaefer, Fdry. Met., American Manganese Division, American Brake Shoe & Foundry Co., Chicago Heights, Ill.
William T. Silver, Chas. C. Kawin Company, Chicago, Illinois
Leonard A. Stroberg, Foreman, Greenlee Foundry Co., Chicago, Ill.
C. L. Waggoner, Plant Mgr., Interlake Iron Corp., Chicago, Illinois
Towner K. Webster, Jr., President, Hydro-Blast Corp., Chicago, Ill.

Detroit Chapter

*Fremont Flask Co., Fremont, Ohio (C. W. Yeager, Sec'y)
Geo. L. Grimes, Special Fdry. Repr., Baker-Perkins, Inc., Detroit, Mich.
Robert P. Harris, Ch. Engineering Student, Michigan State College, E. Lansing, Mich.
*Packard Motor Car Co., Detroit, Mich. (O. F. Carpenter, Fdry. Mgr.)
Howard Womochel, Research Asst., Engineering Experiment Station, Michigan State College, East Lansing, Michigan

Metropolitan Chapter

Clifford M. Apgar, Supv. of Standard Practice, Taylor-Wharton Iron & Steel Co., East High Bridge, N. J.
D. Barron, Inspector, American Steel Castings Co., Newark, N. J.
Filbert P. Diez, Foreman, American Steel Castings Co., Newark, N. J.
Wm. B. Goudielock, Met., Phelps Dodge Copper Products Corp., New York, N. Y.
Wm. R. Hempstead, Research Asst., International Nickel Co., Bayonne, N. J.
John Hodne, Fdry. Foreman, National Meter Division, Pittsburgh Equitable Meter Co., Brooklyn, N. Y.
Herbert Maginnis, Supv. of Standard Practice, Taylor-Wharton Iron & Steel Co., East High Bridge, N. J.
Wm. A. Main, Teacher, Brooklyn Metal Trades High School (Board of Education of N.Y.)
John W. Reid, Newark, N. J.
*Wright Aeronautical Corp., Paterson, N. J.

Michiana Chapter

Sanborn Denno, Jr., Stock Clerk, Clark Equipment Co.,
Buchanan, Mich.

Northern California Chapter

James Donald Crain, Sales Mgr., Vulcan Foundry Co.,
Oakland, Calif.
Joseph R. Lopes, Pacific Steel Casting Co., Berkeley,
California
*Pacific Metals Co., Ltd., San Francisco, Calif. (Hugh W.
Davies, Sales.)
Fred W. Plate, Sales, Pacific Metals Co., Ltd., San
Francisco, Calif.
Harold C. Wegner, Ass't Met., Pacific Foundry Co., San
Francisco, Calif.

Northeastern Ohio Chapter

*Art In Bronze Co., Inc., Cleveland, Ohio (O. H. Harer,
Vice Pres. and Treas.)
A. J. Dublo, Chemist, Sterling Foundry Co., Wellington,
Ohio
J. N. Fleming, Prod. Mgr., Art In Bronze Co., Inc.,
Cleveland, Ohio
Herbert Flint, Supt., Berted Foundry Co., Columbiana,
Ohio
Harry L'Amoureux, Supt., Rybolt Furnace Co., Ashland,
Ohio
Fred J. Luethjohn, Supt., Forest City Foundry Co.,
Cleveland, Ohio
Louie Simeone, Molder, Hill Acme Co., Cleveland, Ohio
Ralph G. Wieland, Plant Mgr., Forest City Foundry Co.,
Cleveland, Ohio

Philadelphia Chapter

Harry D. Hoskins, Jr., Foreman, Ingersoll-Rand Co.,
Phillipsburg, N. J.
Clarence R. Klapp, Crane Operator, Reading Steel Cast-
ing Division, American Chain & Cable Co., Inc.,
Reading, Pa.
G. Philip Wendt, Time Study, Lebanon Steel Foundry,
Lebanon, Pa.

Quad-City Chapter

Bernard W. Engeland, Apprentice Draftsman, J. I. Case
Company, Rock Island, Ill.
George M. Eveleth, Exec. Engr., J. I. Case Co., Rock
Island, Ill.
Wilbur Johnson, Apprentice, International Harvester
Co., Rock Island, Ill.
Herman Luerssen, Supv., International Harvester Co.,
Rock Island, Ill.
*Mississippi Foundry Corp., Rock Island, Ill. (I. C.
Gellman, Vice Pres.)
Wm. T. Smith, Checker, International Harvester Co.,
Rock Island, Ill.
Jack Ward, Ass't Fdry. Supt., J. I. Case Co., Rock
Island, Ill.

St. Louis Chapter

Carl G. Dabler, Jr., Patt. Shop Foreman, American Steel
Foundries, East St. Louis, Ill.
Henry T. Gullic, Supt., Duncan Foundry & Machine Co.,
Alton, Ill.
Roland T. Leisk, Ass't Works Mgr., American Steel
Foundries, East St. Louis, Ill.
*National Foundry and Machining Co., St. Louis, Mo.
(Wm. L. Heckmann, Pres.)
Ernest W. Strauch, Fdry. Foreman, Key Company, East
St. Louis, Ill.

Southern California Chapter

J. H. Alleman, Molder, Alhambra Foundry Co., Ltd.,
Los Angeles, Calif.
Paul Alleman, Alhambra Foundry Co., Ltd., Los Angeles,
California
*Apex Steel Corp., Los Angeles, Calif. (H. S. Hitchcock,
Pres.)
Ike Arnold, Downey, Calif.
H. R. Barnhart, Navy Inspector, North American Avia-
tion, Inglewood, Calif.
C. O. Beardslee, Owner, C. O. Beardslee Refractory
Materials, Long Beach, Calif.
C. E. Beckett, Tillotson Clay Products, Los Angeles,
Calif.
L. W. Beebe, Sales Engr., Ingersoll-Rand Co., Los
Angeles, Calif.

*Company.

Frank K. Bennett, Ass't Inspection Engr., Utility Elec-
tric Steel Foundry, Los Angeles, Calif.
Harry K. Blackman, Sales, Chicago Pneumatic Tool Co.,
Los Angeles, Calif.

*Harry E. Blood Co., Los Angeles, Calif. (D. C. Murray)
Cecil A. Boyer, Foreman, Kinney Aluminum Co., Los
Angeles, Calif.
Frank Bunker, Supt., General Metals Corp., Los Angeles,
California
Barney Castor, Master Mech., National Engineering Co.,
Chicago, Ill.
J. M. Crawford, Chamberlain Co., Equipment & Methods
Div., Los Angeles, Calif.
George B. Davis, Molder, Grayson Heat Control, Ltd.,
Lynwood, Calif.
J. H. Davis, Supt., Utility Electric Steel Foundry, Los
Angeles, Calif.
R. P. Drummond, Hanford Foundry Co., San Bernardino,
California.
*Eastern Iron & Metal Co., Ltd., Los Angeles, Calif.
(David B. Rosenthal, Sec'y)
Wm. Eichenhofer, Owner, Pacific Brass Foundry, Los
Angeles, Calif.
Dennis Gardner, Supt., Johnson Foundry & Machine
Works, Los Angeles, Calif.
Gordon M. Gilmore, Sales Engr., Los Angeles Steel
Casting Co., Los Angeles, Calif.
J. R. Harrison, Salesman, C. O. Beardslee Refractory
Materials, Long Beach, Calif.
Robert L. Hartman, Production Mgr., Utility Electric
Steel Foundry, Los Angeles, Calif.
Fred T. Hays, Works Mgr., Westlectric Castings, Inc.,
Los Angeles, Calif.
Walter Hirsch, Industrial Research Laboratories, Los
Angeles, Calif.
Harry Hoffman, Foreman, Kinney Aluminum Co., Los
Angeles, Calif.
Harry O. Holder, Patt. Shop Foreman, Kinney Iron
Works, Los Angeles, Calif.
W. H. Hopkins, Insp. Engr., Utility Electric Steel Found-
ry, Los Angeles, Calif.
H. W. Hubner, Independent Iron Works, Los Angeles,
California
C. E. Hurray, Jr., Commercial Enameling Co., Los
Angeles, Calif.
*Kinney Aluminum Co., Los Angeles, Calif. (Bryant
Myers, Plant Mgr.)
John W. Kreidler, Apprentice, Enterprise Foundry Co.,
Los Angeles, Calif.
H. Landolt, Foreman-Patt. Shop, Los Angeles Steel Cast-
ing Co., Los Angeles, Calif.
Walter F. Leach, Ass't Mgr., Pacific Ball Mfg. Co.,
Huntington Park, Calif.
Charles R. Marshall, Sales, Chamberlain Co., Los
Angeles, Calif.
Robert McAllister, Los Angeles Steel Casting Co., Los
Angeles, Calif.
Alden C. McClellan, Burbank, Calif., Sales, Cleveland
Pneumatic Tool Co., Cleveland, Ohio.
Earl McClintock, Owner, McClintock Clay Products,
Los Nietos, Calif.
Ken. R. McIntyre, Partner, Modern Pattern & Foundry
Co., Los Angeles, Calif.
E. B. Moritz, Mgr., Moritz Foundry, Santa Ana, Calif.
Myron B. Niesley, Pres., California Testing Labora-
tories, Inc., Los Angeles, Calif.
H. M. Noble, Melter, Utility Electric Steel Foundry,
Los Angeles, Calif.
L. D. O'Hallaron, Sales Ex., Independent Foundry Supply
Co., Los Angeles, Calif.
T. D. O'Neil, Sec'y-Treas., Southern California Foundry,
Los Angeles, Calif.
*Pacific Cast Iron Pipe Fittings, South Gate, Calif.
(Frank Trotzke, Fdry. Supt.)
*Pacific Casting Co., Los Angeles, Calif. (Wm. G. Ham-
lin, Partner)
H. G. Pagenkopp, Partner, Angelus Pattern Works,
Huntington Park, Calif.
Alex Reid, Owner, Consolidated Pattern Works, Los
Angeles, Calif.
*Rich Manufacturing Co., Los Angeles, Calif. (L. N.
Coleman, Gen'l Supt.)
H. T. Riley, Quality Foundry Company, Los Angeles,
California.
M. S. Robb, Salesman, Bethlehem Steel Co., Los Angeles,
California
Clarence Ryckert, Molder, James E. McGraw & Sons,
Los Angeles, Calif.
*Smith Emery Company, Los Angeles, Calif. (D. F.

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Roberts, Testing Engr.)
 James B. Smith, Commercial Heat Treating Co., Los Angeles, Calif.
 Gordon F. Sondraker, Mgr., Chamberlain Company, Los Angeles, Calif.
 Osborne J. Stoudt, Sales Eng., Malleable Div., General Metals Corp., Los Angeles, Calif.
 Joseph B. Tipton, Shipping Clerk, Los Angeles Steel Casting Co., Los Angeles, Calif.
 Fred Tomaseck, Mgr., Production Pattern Co., Los Angeles, Calif.
 M. Treweek, Purch. Agent, Rich Manufacturing Co., Los Angeles, Calif.
 W. C. Williams, Melter, Utility Electric Steel Foundry, Los Angeles, Calif.

Western Michigan Chapter

*American Seating Co., Grand Rapids, Mich.
 Fred C. McCarthy, Engr., Wolverine Brass Works, Grand Rapids, Mich.

Western New York Chapter

Harold R. King, Met., Metal & Alloy Specialties Co., Inc., Buffalo, N. Y.
 D. M. Scott, Mgr., Allegheny Ludlum Steel Corp., Buffalo, N. Y.
 N. Stanley Snyder, Buffalo, N. Y., Dist. Sales Mgr., Link-Belt Co., Chicago, Ill.

Wisconsin Chapter

*American Skein & Foundry Co., Racine, Wis. (R. J. Kelly, Supt.)
 Harry Arneson, Sec'y, Spring City Pattern Works, Inc., Waukesha, Wis.
 *F. & W. Pattern Works, Milwaukee, Wis. (Fay D. Wohath, Owner)
 Alfred M. Fischer, Supt., The Chas. Jurack Co., Milwaukee, Wis.
 Ed. Freeman, Geo. J. Meyer Mfg. Co., Cudahy, Wis.
 *Frost Company, Kenosha, Wis. (M. C. Frost, Vice Pres.)
 Christ Garschke, Prop., Empire Brass & Aluminum Foundry, Milwaukee, Wis.
 *General Foundries Co., Milwaukee, Wis. (F. W. Busche, Pres.)
 Odell Gleaton, Core Inspector, Allis-Chalmers Mfg. Co., West Allis, Wis.
 Larry Gradecki, Core Maker, Allis-Chalmers Mfg. Co., Milwaukee, Wis.

*Company.

Fred B. Haldy, Vice Pres. & Sec'y, C. L. Cole Eng. Co., Inc., Milwaukee, Wis.
 R. C. Hardie, Industrial Sales, Cities Service Oil Co., Milwaukee, Wis.
 Ray Heimsch, Iron Dist., Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 James W. Hughes, Sales, Kenosha, Wis., Frederic B. Stevens, Inc., Detroit, Mich.
 Harry H. Johnson, Walter Gerlinger, Inc., Milwaukee, Wisconsin
 *Chas. Jurack Co., Milwaukee, Wis. (Paul Jurack, Pres.)
 Howard R. Leland, Iron Dist., Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 *Nash-Kelvinator Corp., Nash Motors Division, Kenosha, Wis. (F. M. Beauregard, Factory Mgr.)
 L. B. Pfost, Supt., Gray Iron Div., Lakeside Malleable Castings Co., Racine, Wis.
 Martin Poredos, Jr., Foreman, Core Room, Allis-Chalmers Mfg. Co., West Allis, Wis.
 *Racine Pattern Works, Racine, Wis. (E. J. Simanek, Vice Pres.)
 *Spring City Pattern Works, Inc., Waukesha, Wis. (Henry B. Mueller, Pres. & Treas.)
 Ben G. Thiel, Purch. Agent, Waukesha Motor Co., Waukesha, Wis.
 George E. Tisdale, Sec'y-Treas., Zenith Foundry Co., Milwaukee, Wis.
 John Wiedepfuhl, Wehr Steel Company, Milwaukee, Wis.

Outside of Chapter

A. C. Barbour, Mgr., Roessing Bronze Co., Etna, Pittsburgh, Pa.
 *Crown Iron Works, Minneapolis, Minn. (E. S. Anderson, Pres.)
 J. Milton Harvey, Supt., T. M. Chapman's Sons Co., Olt Town, Maine
 Carl W. Magnuson, Student, University of Minnesota, Minneapolis, Minn.
 Howard W. Nicol, Student, University of Minnesota, Minneapolis, Minn.
 John J. Nolan, Foreman Molder, U. S. Naval Torpedo Station, Newport, R. I.
 *Northern Pump Co., Columbia Heights Station, Minneapolis, Minn. (J. W. Bryant, Fdry. Supt.)
 Alfonso Perez-Canto, Chief Engr., Establecimientos Metalurgicos "INDAC" S. A., Santiago, Chile, South America
 Fred S. Price, Fdry. Engr., Williams & Co., Inc., Pittsburgh, Pa.
 Sidney S. Silberg, Student, University of Minnesota, Minneapolis, Minn.

Many Committee Meetings Held During the Convention

ANNUAL conventions of A.F.A. provide a medium for holding meetings of committees and subcommittees dealing with the various activities of the Association. This year, because of the fact that no exhibit was held, a large number of committee and subcommittee meetings were scheduled. Meetings of various Division Advisory committees, gray iron, steel, malleable and non-ferrous, were held on various days throughout the convention. At these meetings, current problems of the divisions, as well as plans for future activities, were discussed. In addition, meetings of the Executive Committee of the Foundry

Sand Research and Cupola Research committees were held.

The Joint Committee on Foundry Refractories held a meeting on Monday, as did also the Non-Ferrous Division Round Table Conference Committee and the Non-Ferrous Division Research Committee.

Meetings of subcommittees of the Foundry Sand Research Committee were held on Tuesday. The following subcommittees met to plan activities for the coming year: Grading and Fineness, Flowability, Effect of Sands on the Properties of Castings and Sintering Test. The Apprentice Training Committee also held a luncheon on Tuesday,

while the Non-Ferrous Division Committee on Recommended Practices met later in the day.

The following subcommittees of the Gray Iron Division Alloy Cast Iron Committee held meetings on Wednesday afternoon for the purpose of reviewing various chapters in the book, *Alloy Cast Irons*, which is soon to be revised, and also to assign work to various members of the committee: Heat Treatment, Foundry Practice, Metallurgical Theory, Properties, White and Chilled Irons, Alloying Elements and Processed Irons.

It might be stated that many points of interest were brought out at the various committee and subcommittee meetings, the results of which will be evident in the activities of these committees and subcommittees during the coming year.



Chapter Activities

Minnesota Group Petitions for Chapter

FOR SOME TIME, members in the Minnesota district, centering around Minneapolis and St. Paul, have been giving consideration to the possibility of forming an A.F.A. chapter. As a majority of these members are also members of the Twin City Foundrymen's Association and as that organization has been holding regular meetings with the same purposes as an A.F.A. chapter, the chapter proposal was discussed with this local association.

Last month, the members of the Twin City Foundrymen's Association joined with the A.F.A. members in the district in petitioning the A.F.A. Board of Directors to authorize the organizing of a chapter under A.F.A. The Board of Directors unanimously approved the petition and the date for a chapter organization meeting was set for Monday, May 26.

The meeting is being held at the plant of the Western Alloyed Steel Castings Co., Minneapolis, with a dinner gathering. Following the dinner and business meeting, A. W. Gregg, Whiting Corp., Harvey, Ill., has been scheduled for a talk on cupola practice. R. E. Kennedy, Secretary of the Association, will represent the national office.

The Twin City Foundrymen's Association, joining in this chapter movement is one of the oldest of the local associations, being organized in 1899. The officers and executive committee of the Twin City Foundrymen's Association are:

President—Fred Kaim, Union Brass & Metal Mfg. Co., St. Paul.

Vice President—E. C. Madson, Anderson Foundry Co., Bayport.

Secretary-Treasurer—O. W. Potter, University of Minnesota, Minneapolis.

Directors:

S. V. Wood, Minneapolis Electric Steel Casting Co., Minneapolis.

Frederick Christensen, R. R.

Howell & Co., Minneapolis, Minn.
Jack Bryant, Northern Foundry Co., Minneapolis.

E. H. Ryan, St. Paul Brass Foundry Co., St. Paul.

Stuart Cameron, Valley Iron Works, St. Paul.

G. I. Ashton, St. Paul Foundry Co., St. Paul.

St. Louis Chapter Holds Annual Meeting

By J. W. Kelin*, St. Louis, Mo.

THE May 8 meeting of the St. Louis District chapter, having been designated as the annual business meeting and a round table discussion evening, was very well attended. Following the dinner period, the business session was opened with the presentation of a plated gavel to Chairman W. Carter Bliss, Scullin Steel Company, and St. Louis representative of OPM, as a token of his years' service as chief executive of the chapter.

Secretary-Treasurer J. W. Kelin, Federated Metals Div., American Smelting & Refining Company, then presented the annual report and financial statement, both indicating a year of extremely encouraging progress as well as a very sound financial condition of the group. The various committees then gave a summary of their activities and special attention was drawn to the forthcoming picnic by Entertainment Chairman M. A. Bell, M. A. Bell Company, pointing out that June 14th had been designated as the date for this annual outing, which is to be held at Joe Davies' Country Club, Ferguson, Mo.

Emil Goerger, City Pattern Company, submitted the report of the nominating committee. In this report, L. J. Desparois, Pickands, Mather & Company,

was nominated as chairman for the coming fiscal year. At the conclusion of the nominating committee's report, Mr. Desparois, however, declined the nomination with thanks. It was indicated that although he deeply appreciated the honor, it was his opinion that the chairmanship of the chapter should be with one who was an operating foundryman. Mr. Desparois then nominated Carl Morken, Carondelet Foundry Company, to be chairman.

Roy Jacobsen, Carondelet Foundry Company, who had been nominated as a director, then declined his nomination and, in his stead, placed the name of Mr. Desparois. Mr. Jacobsen pointed out that the service rendered by Mr. Desparois to the chapter over a period of years had been very encouraging and insisted that this be accepted as a token of recognition.

Final officers as elected were as follows:

Chairman—Carl Morken, Carondelet Foundry Company.

Vice Chairman—C. B. Shanley, Semi-Steel Castings Company.

Secretary-Treasurer—J. W. Kelin, Federated Metals Div., A. S. & R. Company.

Directors for Three Year Term—L. J. Desparois, Pickands, Mather & Company.

H. Goodwin, Medart Company.
Wm. McKee, Key Company.

AMERICAN FOUNDRYMAN

*Federated Metals Div., American Smelting & Refining Co., and Secretary-Treasurer, St. Louis District chapter.

Emil Goerger, City Pattern & Model Company.

Director for Two Year Term—

James Roland, Fry-Fulton Lumber Company.

Directors for One Year Term—

Francis O'Hare, Central Brass & Aluminum Foundry.

Walter Illig, Banner Iron Works.

There being no further business, the meeting was then divided into three groups: gray iron, steel and non-ferrous being under the chairmanship of Charles Scullin, Luther Kleber and Francis O'Hare, respectively. A most worthwhile evening of round table discussion was had by all of those in attendance at their various sessions.

cussed "Effect of Manganese on Second Stage Graphitization." The discussion was led by G. B. Stantial, foundry superintendent, Illinois Malleable Iron Co., Chicago, Ill. Speaker for this malleable gathering was George K. Minert, assistant metallurgist, Gunito Foundries Corp., Rockford, Ill.

The steel session talked on "Controlled Directional Solidification," the meeting being led by C. E. Westover, works manager, Burnside Steel Foundry Co., Chicago. Fred A. Melmoth, vice president and works manager, Detroit Steel Casting Co., Detroit, Mich., was the speaker for this group.

"Recent Developments in Furnace Design to Meet Demands Set Up by Defense Industry" was the subject of T. J. Myall, sales manager, Fisher Furnace Co., at the non-ferrous discussion. The discussion leader was Charles McKelvey, general manager, brass foundry, Chicago Hardware Co., North Chicago.

Chicago Rings Bell at Group Meetings

By B. L. Simpson*, Chicago, Ill.

GATHERING for the final meeting of the 1940-41 year, some 130 members and guests were treated to one of the best meetings of the year. Chapter Chairman Garnet Phillips, International Harvester Co., was in charge.

Following the dinner the members heard the nominating committee's report and elected the following men as officers for 1941-42:

Chairman, L. L. Henkel, Interlake Iron Co.

Vice Chairman, A. G. Gierach, American Manganese Steel Div., American Brake Shoe & Foundry Co., Chicago Heights, Ill.

Secretary, B. L. Simpson, National Engineering Co.

Treasurer, C. C. Kawin, Chas. C. Kawin Co.

Directors (to serve 3 years), Garnet Phillips, International Harvester Co.; John W. Porter, American Steel Foundries; J. F. Lammering, Hammond Brass Co.; D. N. Gellert, Nichol-Straight Foundry Co.; (to serve 2 years), J. D. Burlie, Western Electric Co.; (to serve 1 year), Arthur Kloff, Hansell-Elcock Company.

Then to climax the business meeting, *Simpson's Rustlers* placed in Chairman Phillips' hands the third place membership bell. Head Rustler Simpson promised the chapter the bell would bong long in Chicago.

After the business meeting, the meeting was adjourned and the members then went to separate rooms for the group meetings. The gray iron group discussed "Controlled Moisture in Cupola

Blast." The discussion leader for this session was Robert G. Guthrie, chief metallurgist, Peoples Gas Light & Coke Co. The speakers were F. M. Johnson, sales manager, Surface Combustion Corp., Air Conditioning Division; Glover Strong, Chicago district manager, Carrier Corp., and C. J. Lonnee, general plant superintendent, Muskegon Piston Ring Co., Sparta, Mich.

The malleable meeting dis-

Southern California Holds Record Meeting

By W. F. Haggman*, Huntington Park, Calif.

WITH more than 140 foundrymen attending the May 1 meeting of the Southern California chapter at the Los Angeles Elks Club, Los Angeles, N. J. Dunbeck, vice president, Eastern Clay Products, Inc., Eifort, Ohio, gave an excellent talk on the history and various types

of bentonites used in synthetic foundry sand practice. He described the various methods of introducing bentonites and clays into foundry sand systems and then led a general discussion which brought out many questions and answers which proved of interest to all in attendance.

Robert Gregg, Reliance Regulator Co., Alhambra, chairman of

*Foundry Specialties Co., and Secretary, Southern California chapter.



The four officers elected to serve the Central Indiana chapter for the year 1941-42 are: (left to right) R. A. Thompson, Electric Steel Castings Co., Indianapolis, secretary; B. P. Mulcahy, Citizens Gas & Coke Utility, Indianapolis, vice chairman; H. B. Harvey, Indiana Foundry Corp., Muncie, chairman; and J. P. Lentz, International Harvester Co., Indianapolis, treasurer.

*National Engineering Co., and Secretary, Chicago chapter.

the committee on arrangements for the Pacific Coast foundry regional meeting to be held May 22 and 23, Biltmore Hotel, Los Angeles, announced that all necessary arrangements had been made for a successful meeting.

In addition, the entertainment committee showed moving pictures of the "Gay Nineties" and other old-time pictures.

With Chapter Chairman James E. Eppley, Kinney Iron Works, Los Angeles, presiding, the nominating committee, under the chairmanship of Pasquale Arpea, Axelson Mfg. Co., Los Angeles, presented the committee's choice of officers for the coming year as follows:

Chapter President—B. G. Emmett, Los Angeles Steel Casting Co., Los Angeles, Calif.

Chapter Vice President—Earl Anderson, Enterprise Iron Works, Los Angeles.

Chapter Secretary—W. D. Bailey, Jr., Pacific Metals Co., Ltd., Los Angeles.

Chapter Treasurer—Gordon Sondraker, Chamberlain Co., Los Angeles.

Directors for two years:

W. F. Haggman, Foundry Specialties Co., Huntington Park.

Earl Shoemaker, Kay-Brunner Steel Products, Inc., Alhambra.

D. A. Luper, Grayson Heat Control, Ltd., Lynwood.

B. M. Campbell, Dayton-Waldrup Co., Hollydale.

E. M. Wagner, General Metals Corp., Los Angeles.

Retiring President James E. Eppley will serve on the board for one year.

Quad City Hears About Core Binders

By J. Morgan Johnson*, Moline, Ill.

ADDRESSING some 75 members and guests of the Quad City chapter, J. A. Gitzen, Delta Oil Products Co., Milwaukee, Wis., gave a vivid picture of "Core Binders, Their Characteristics in Various Core Sands and Core Sand Mixes." The meeting was held at the Fort Armstrong Hotel, Rock Island,

*Vocational Supervisor, Tri-City Manufacturers' Assn., and Secretary-Treasurer, Quad City chapter.

on April 21 with Chapter Chairman Nathan Lesser, Deere & Co., presiding.

Mr. Gitzen told of the various types of core binders in the foundry industry, their properties, characteristics and uses in the making of large and small cores. Advantages and problems involved in the use of various binders were given consideration and explained. Many features of all the core binders were brought out, which had been determined on considerable research work, in order to reduce troubles in making castings caused by cores. Core washes also were discussed as to their importance on the use of cores.

Quad City Chapter Plans for Coming Year

By J. Morgan Johnson*, Moline, Ill.

THE annual business meeting of the Quad City Chapter was held on May 19 at the LeClaire Hotel, Moline, Ill., with Nathan Lesser, Deere & Co., Moline, chairman of the chapter, presiding. In addition to reports by the Secretary-Treasurer, Trustees and the Auditing, Membership and Annual Outing committees, the following were elected officers of the chapter for the coming year in conformity with recommendations of the Nominating Committee, which reported their suggestions at the April meeting:

Chairman—A. H. Putnam, A. H. Putnam Co., Rock Island.

Vice Chairman—Alex Matheson, French & Hecht, Inc., Davenport, Iowa.

Secretary-Treasurer—J. Morgan Johnson, Tri-City Manufacturers' Assn., Moline.

Members of Board of Directors for three years:

Harry Mead, John Deere Harvester Works, East Moline.

W. E. Jones, Bettendorf Co., Bettendorf, Iowa.

R. E. Wilke, Deere & Co., Moline.

Retiring Chapter Chairman Nathan Lesser was elected a

*Tri-City Manufacturers' Association and Secretary-Treasurer, Quad City Chapter.

member of the Board of Trustees for three years.

J. H. Ploehn, French & Hecht, Inc., Davenport, Iowa, chairman of the Educational Committee of the Quad City Chapter and the Tri-City Manufacturers' Association, presented prizes to the winners in the local Quad City apprenticeship contest in molding and patternmaking.

M. J. Gregory, Caterpillar Tractor Co., Peoria, was presented as a nominee for the Board of Directors of the American Foundrymen's Association.

The speaker of the evening was L. D. Harkrider, president, General Malleable Corp., Waukesha, Wis., who spoke on "How the General Manager Views a Malleable Iron Foundry." H. Bornstein, Deere & Co., Moline, introduced Mr. Harkrider. In his talk, the speaker explained many of the problems with which he, as a general manager, is confronted in the manufacture of malleable castings. Some of these problems are of a technical nature, others are personal, while still others are of an administrative nature. He gave a brief history of the iron and steel industry, as well as the malleable castings industry and gave information as to the possibilities of personnel in the industry, safety programs and legislative problems with which management must deal to secure cooperation of employer and employee. Methods followed in handling such cases were explained, particularly emphasizing the use of proper manufacturing processes and systems of industrial relations.

The annual outing of the Quad City Chapter will be held at the Eagles' Country Home, Rock River, Saturday, June 21.

Robinson at April Toledo Meeting

By S. N. Farmer*, Cleveland, O.

L. P. ROBINSON, Werner G. Smith Co., Cleveland, Ohio, guest speaker at a meeting of 75 Toledo foundrymen, spoke on "Practical Core Room

*Sand Products Corp.

Problems." The meeting was held at the Hotel Hillcrest. Among the many guests was R. E. Kennedy, secretary, American Foundrymen's Association, who gave a brief talk on the advantages of forming a local chapter in the Toledo area.

Local Chairman R. L. Binney, Binney Castings Co., then introduced the speaker, who gave a most interesting and instructive talk on core room problems and who spent quite a bit of time answering questions after he had concluded his talk.

to our industry, which will have its premier on May 7. The opportunity to view this film, embracing a romantic story and the most beautiful photography in connection with one of our principal products, was more than appreciated by everyone in attendance.

Hamilton Fish Speaks at Wisconsin Chapter

By H. C. Waldron*, Milwaukee, Wis.

REPRESENTATIVE HAMILTON FISH, member of the House Committee on Foreign Affairs, addressed the April 18 meeting of the Wisconsin chapter at Hotel Schroeder, Milwaukee, on "America Looks Ahead." In his address, Representative Fish stated that the nation was at the crossroads and must choose a path to follow. The greatest issue that confronts American people is the convoying of ships to Britain. Convoying and war are inseparable, he stated. No convoying—no war.

Representative Fish expressed his fears as to the result of the huge spending program and if it lasts several years, the monumental national debt may cause a national structure collapse. He further stated that our free institutions are the hope of the world, but there is great danger of Communists, Fascists and Nazi-ism, who preach the gospel of hate, destroying these institutions.

Congress should enact deportation laws to send the "ISM" supporters back to their foreign homes and give their jobs to loyal American citizens.

Over 350 attended this meeting. With Chapter President B. D. Claffey, General Malleable Corp., Waukesha, presiding, the announcement was made that the following had been elected officers of the Wisconsin chapter for the coming year:

President—A. C. Ziebell, Universal Foundry Co., Oshkosh.

Vice President—H. C. Waldron, Nordberg Mfg. Co., Milwaukee.

Secretary — George Dreher, Ampco Metal, Inc., Milwaukee.

*Nordberg Mfg. Co., and Secretary, Wisconsin chapter.

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Treasurer—R. F. Jordan, Sterling Wheelbarrow Co., Milwaukee.

Directors for three years:

William B. Hambley, Allis-Chalmers Mfg. Co., West Allis.

John Bing, A. P. Green Fire Brick Co., Milwaukee.

The entertainment feature of the evening was the rendition of several selections by the A Cappella Choir of Wauwatosa High School, under the direction of Miss Gladys Garness.

State Cooperation With Industry Discussed at Buffalo

By Eliot Armstrong*, Buffalo, N. Y.

BEFORE the largest attendance we have had at any current business meeting this year, composed of executives, technical experts and operating heads of foundries in this district, at our May 2 meeting, one of the members of the Western New York chapter, gave a preview of an industrial film related

*Inter Allied Foundries of New York State and Secretary, Western New York chapter.

There was offered for approval an amendment to our By-Laws increasing the Board of Directors from six to nine, involving the election of three members each year for three year periods, the additional members to be picked up one each year in 1941, 1942 and 1943 to avoid short time staggered terms. This amendment had practically unanimous approval.

Following the usual drawing of the secretary's prizes, which are confined to those who are thoughtful enough to send in their reply cards, the chairman asked the secretary to introduce the speaker of the evening, William J. Picard, chairman, Board of Standards and Appeals of New York State.

Mr. Picard, who has been in public service for over thirty years and who was Deputy Industrial Commissioner at the time Governor Lehman appointed him to the chairmanship of the newly created Board of Standards and Appeals, gave a most friendly and informative talk on "Constructive Contact Between State and Industry." He outlined the duties and responsibilities of the Board to provide for and obtain by rule the protective elements afforded employees by legislation, and he

Representative Hamilton Fish, New York, was the guest speaker at the Wisconsin chapter meeting April 18. He is shown here with various members and chapter officers. Upper left—Representative Fish (center) with Chapter President B. D. Claffey (left) and Vice President A. C. Ziebell (right). Lower left—A group of members ask the Congressman a few questions, (left to right) Fred Pritzlaff, Falk Corp.; Chapter President Ben Claffey, General Malleable Corp.; Representative Fish; E. O. Jones, director, safety and hygiene, American Foundrymen's Association, Chicago; and Harry Donald, Interstate Supply & Equipment Co. Right—(left to right) G. K. Dreher, Ampco Metals, and Ray Flansburg, Belle City Malleable Iron Co., also get a chance to talk with Hamilton Fish.



also pointed out the Board's desire to obtain the constructive help and suggestion of industry in the formulation of those rules and the methods and procedure of appeal. Mr. Picard also dwelt on the Board's desire in every instance to avoid "red tape" or unnecessary restrictions that would hamper production in this time of defense need.

Mr. Picard's frank explanation of his obligations as well as ours dispelled all thought of bureaucracy and developed among those present a distinct feeling of confidence in the entire setup of the Board of Standards and Appeals under his chairmanship.

Non-Ferrous Talk at Pittsburgh by Bush

By R. L. Hartford*, Pittsburgh, Pa.

THE annual non-ferrous meeting of the Pittsburgh Foundrymen's Association featured a talk by Earl J. Bush, brass foundry superintendent, Washington Navy Yard, Washington, D. C. Mr. Bush outlined the procedure being used by the navy in production of non-ferrous castings in connection with the defense program. He laid particular emphasis on the necessity for adequate gating and heading and proper melting practice, as well as the use of first grade raw materials, in order to meet strict navy specifications.

Mr. Bush showed a large number of slides covering production of intricate non-ferrous castings, some of which were produced by pressure casting methods and which featured a wide range of bronzes, nickel alloys, and aluminum alloys. Rough finish tolerances on some of the navy specifications, according to Mr. Bush, give a leeway of plus or minus of 0.002 inch. In a few cases, the rough finish tolerance is considerably less than that, particularly on parts requiring extreme accuracy, such as range finding apparatus.

As a preliminary to Mr. Bush's talk, Mr. C. Warren Stapleton, senior field representative,

*Penton Publishing Co., and Chairman, Program Committee, Pittsburgh Foundrymen's Association.

United States department of labor, apprenticeship unit, outlined the job that his division is doing in setting up apprentice training programs and urged that all foundrymen in the Pittsburgh district devote some time to a study of what the government is planning to do, how it will supply the labor needs of foundries, and how it is cooperating with labor unions in establishing apprentices in the shops.

Ladle Additions is Subject at Northern California Meeting

By G. L. Kennard*, San Francisco, California

EXACTLY 72 attended the May 9 meeting of Northern California chapter at the Alexander Hamilton Hotel, San Francisco, to meet E. K. Smith, Electro Metallurgical Co., Detroit, to hear his talk on "Ladle Additions to Cast Iron." Mr. Smith is scheduled to take part on the program for Foundryman's Day at the Western Metals Congress and Exposition, Los Angeles, May 19 to 23.

We all enjoyed Mr. Smith and profited by his talk. Had he been telling a detective story, his listeners would not have given more attention.

Chairman Ivan Johnson, Pacific Steel Casting Co., Berkeley, particularly recognized our Number One Member Clarence Henderson, H. C. Macauley Foundry Co., Berkeley, who had been absent several months, and L. G. Perkins, L. G. Perkins Foundry, Fresno, who promised to attend more often. We also had several visitors who we can look forward to as possible members.

The several announcements made included reference to the A.F.A. Convention, the Western Metals Congress at Los Angeles and our annual meeting and ladies' night set for June 20, after which the Nominating Committee report recommended E. M. Welch, American Manganese Steel Div., American

*California Foundryman's Institute, and Secretary-Treasurer, Northern California chapter.

Brake Shoe and Foundry Co., for *Chairman*; F. A. Mainzer, Pacific Brass Foundry of San Francisco, *Vice Chairman*; Geo. L. Kennard, Northern California Foundryman's Institute, *Secretary-Treasurer*. *Directors for a two-year term*, Past Chairman S. D. Russell, Phoenix Iron Works, Oakland; Retiring Chairman Ivan L. Johnson, Howard Detro, American Radiator & Standard Sanitary Mfg. Co., Richmond, and Richard Vosbrink, Berkeley Pattern Works, Berkeley.

Immediately following the dinner, we were favored with a remarkable exhibition by the City of Berkeley Police Department of two of their highly trained dogs, in charge of C. A. Roy, trainer, and Officer Chas. W. O'Meara.

Washburn and Nixon Address Central New York

By L. D. Wright*, Geneva, N. Y.

THE regular meeting of the Central New York chapter was held at the Onondaga Hotel, Syracuse, April 9. Chapter Chairman Frank Wheeler, Kimman and Wheeler, had charge of the meeting.

The chapter had two guest speakers, H. S. Washburn, Plainville Casting Co., Plainville, Conn., and Joseph Nixon, Whitehead Metal Products Co.

Mr. Washburn addressed the gray iron foundrymen on "The Production and Sale of Jobbing Castings." The speaker stated that 85 per cent of the 3,400 gray iron jobbing foundries employ an average of 10 to 100 men. Consequently most gray iron jobbing foundries are small and operate with a minimum of overhead. This is one reason why so many foundries do not keep accurate cost records. In order to operate successfully during good times and bad, a foundry should know what it is costing to produce castings. Mr. Washburn urged co-operation between consumer and producer on a normal cost, so that ups and downs of the foundry business would be comparatively small.

*United States Radiator Corp., and Secretary, Central New York chapter.

Speaking to the non-ferrous men, Mr. Nixon gave some valuable information concerning the "Gating and Riser of Non-Ferrous Castings." He illustrated his talk with slides as to the

wrong and right method of gating various castings.

These talks were well received by the members as was evidenced by the amount of discussion that followed.

Round Table Features

Ontario Chapter Meeting

By G. L. White*, Toronto, Ont.

ANOTHER of the popular group meetings of the Ontario chapter of the American Foundrymen's Association was held on April 25 at the Rock Garden Lodge, Hamilton, with Chapter Chairman D. M. Storie, Fittings, Ltd., Oshawa, Ont., presiding.

This was the annual meeting of the chapter and the following officers were elected: *Chairman*, N. B. Clarke, Steel Co. of Canada, Ltd., Hamilton, and *Vice Chairman*, J. J. McFadyen, Galt Malleable Iron Co., Ltd., Galt. New directors elected for a term of three years are: T. Clough, Dominion Wheel & Foundries, Ltd., Toronto; T. D. Barnes, Wm. R. Barnes Co., Ltd., Hamilton; J. Cunningham, International Malleable Iron Co., Ltd., Guelph; and Robert Robertson, International Harvester Co. of Canada, Ltd., Hamilton. Directors with two years to serve are:

*Westman Publications, Ltd., and Secretary-Treasurer, Ontario chapter.

J. C. Stavert, Babcock-Wilcox & Goldie-McCulloch, Ltd., Galt; and N. C. MacPhee, McKinnon Industries, Ltd., St. Catharines. Directors with one year to serve are: J. Thwaites, Beatty Bros., Ltd., London; J. Reid, Canadian Westinghouse Co., Ltd., Hamilton; and C. C. MacDonald, Frederick B. Stevens Co. of Canada, Ltd., Toronto. G. L. White, Westman Publications, Ltd., Toronto, continues as Secretary-Treasurer.

The gray-iron group usually has been much the largest type of meeting and it is, therefore, of interest to note that the malleable iron group drew the largest number from approximately 100 foundrymen present.

The malleable iron group, under the leadership of J. J. McFadyen, Galt Malleable Iron Co., Ltd., was addressed by W. R. Bean, Whiting Corp., Harvey, Ill. Mr. Bean discussed malleable duplexing from the angle of

development of a process, early experiment, and failures, overcoming of difficulties, present successful installations, comparative costs and limitations which call for not less than 30 tons of melt per day to justify the investment.

In the non-ferrous group, under S. R. Francis, Metals and Alloys, Ltd., Toronto, a number of problems of particular interest in the field were discussed. These included the gating of manganese-bronze test bars; the gating of manganese-bronze bushings, depending upon their size; and a discussion of the operation of coke and oil-fired crucible furnaces.

The gray-iron session was conducted by R. C. Stewart, Apco Petroleum Products, Ltd., and W. Sullivan, General Steel Wares, Ltd. Mr. Stewart discussed a foundry problem where the core would not drop completely out of a casting, but left a black ring on the inside as if burning had resulted from the use of poor sand. However, a microscopic examination of the area revealed that it was about one-half sand and one-half iron, showing that the hot iron had penetrated about one-quarter of an inch into the sand core. The addition of silica flour to the sand corrected this difficulty and gave good castings. It was later discovered that the trouble had arisen through separation of

Chesapeake Chapter Holds Quiz Program at April 25 Meeting. Top Left—Mr. Bush and His Pupils in the Brass Discussion. Center Top—A Happy Crowd. Top Right—Talking Things Over. Bottom Right—Um—Food! Bottom—The Quiz Kids, Left to Right—Bert Tray, E. W. Horlebein, Dr. C. A. Sylvester, W. C. Franz and J. W. Mentzer. Bottom Center—At Dinner. Bottom Right—An Anxious Listener. (Photos courtesy Fred Bruggman, The Gibson & Kirk Co., Baltimore)



sand into zones of varying particle size during shipping and storing. In the discussion on this subject, it was pointed out that iron-sand cores could be detected by either magnetic or specific gravity tests. Silica flour was recommended for use in cores for heavy castings while silica sand was sufficient for lighter castings.

Generally, the carbon value of any iron is determined by the amount of silicon added and the cooling rate of the molten iron as it comes from the cupola. Lately, however, because of the need for iron with special properties, there is a tendency to obtain increased carbon values by raising the height of the tuyeres 4-6 in. The coke bed is also raised but the blast pressure lowered.

Another interesting discussion centered around the use of lead pots containing 2 per cent nickel as premium scrap iron. When this material was heated in the cupola and poured into castings, a dross substance came to the top which contained neither lead nor nickel. An examination of one of the original pots revealed a yellow material in the crevices along the inside. The iron in the pot itself contained no nickel. When some of the material was scraped out with a penknife, and analyzed, it was found to be nickel oxide. The explanation offered was that lead, being an excellent solvent for nickel, had leached it out of the iron.

Philadelphia Visits

Girard College

By J. T. Fegley*, Philadelphia, Pa.

A VISIT to Girard College, Philadelphia, was made by 135 members of the Philadelphia chapter April 18. The meeting was conducted in the Assembly Room of Founder's Hall, and Owen D. Evans, superintendent, Mechanical School, addressed the men.

A brief outline of the founding of the school was given along with information concern-

ing its operation and the orphan boys schooled there. The college now has 1,700 boys and an endowment that exceeds eighty-five million dollars.

A tour of the grounds and buildings was made and it was interesting to see the boys on actual production work in the machine shop, carpenter and pattern shop, printing plant, foundry and sheet metal shop and auto repairing. The latest types of machinery and equipment have been installed. This portion of the tour was handled by Curtis Pritchard, assistant superintendent of admission and discharge.

The opportunity that the members had of watching these orphan boys work made every man think that these boys would make good and useful citizens and earn for themselves a place in society.

Detroit Chapter

Nominates Officers

By A. H. Allen*, Detroit, Mich.

V. A. CROSBY, Climax Molybdenum, Detroit, has been nominated chairman of the Detroit chapter, American Foundrymen's Association, for the 1941-42 term. Nominations for new chapter officers and directors were made at the May 22 meeting of the group. Installation will be at the annual business meeting in June. Other nominations include: *Vice Chairman*, F. A. Melmoth, Detroit Steel Casting Co.; *Treasurer*, W. W. Bowring, Frederic B. Stevens, Inc.; *Secretary*, A. H. Allen, Penton Publishing Co.

Directors are: *For term expiring 1944*—Glenn Coley, Detroit Edison Co.; Carl F. Joseph, Saginaw Malleable Division, General Motors Corp.; O. E. Sundstedt, General Foundry & Mfg. Co., and E. C. Hoenicke, Eaton-Erb Foundry Division, Eaton Mfg. Co.; *for term expiring 1943*—O. L. Allen, Pontiac Motor Division, General Motors Corp.; O. E. Goudy, Kelsey-Hayes Wheel Co.; E. L. Morrison, Budd Wheel Co., and H. W.

Dietert, H. W. Dietert Co.; *for term expiring 1942*—A. J. Gonter, Dodge Division, Chrysler Corp.; R. G. McElwee, Vanadium Corp. of America; J. H. Crawley, American Foundry & Pattern Co., and W. B. McFerrin, Cadillac Motor Car Division, General Motors Corp.

Gating and Riser

Discussed at Birmingham

By D. L. Booker*, Birmingham, Ala.

THE monthly meeting of the Birmingham district chapter was held at the Tutwiler Hotel, April 18, with 40 attending the dinner and more guests and members attending the regular meeting.

Roy E. Lee, superintendent, Newbury Manufacturing Co., Talladega, Ala., was the speaker, his topic being "Gating and Riser." Mr. Lee's connection with the foundry industry for over a period of years qualified him as an excellent man for this subject. He discussed the advantages of horn, pencil, wedge and split gates and the advantage and location of risers. After the speaker had finished his lecture, he was asked many questions and given foundry problems to help solve.

*National Cast Iron Pipe Co., and Secretary-Treasurer, Birmingham District chapter.

Group Meetings at

Northern California

By Geo. L. Kennard*, San Francisco, Cal.

THE April 18 meeting of the Northern California chapter, over which Chapter Chairman Ivan L. Johnson, Pacific Steel Casting Co., Berkeley, presided, was held at the Lake Merritt Hotel as a group meeting. This was the last group gathering for this year.

Following the dinner the groups separated to their choice of subjects. George W. Stewart, Pacific Brass Foundry, San Francisco, had charge of the non-ferrous group and he led the discussion, "Gas Melting Fur-

*Northern California Foundrymen's Institute, and Secretary-Treasurer, Northern California chapter.

*North Bros. Manufacturing Co., and Chairman, Publicity Committee, Philadelphia chapter.

*Detroit Editor, Penton Publishing Co., and Secretary, Detroit chapter.

naces in the Non-Ferrous Foundry," by E. W. Williams. This paper was taken from the June, 1941, A.F.A. Transactions.

Charles Hoehn, Jr., Enterprise Engine and Foundry Co., San Francisco, used a delinea-scope to illustrate his talk on "Chaplets and the Steel Castings," by H. F. Taylor and E. A. Rominski, found in the March A.F.A. Transactions, 1941.

James L. Francis, Vulcan Foundry Co., Oakland, also used a delinea-scope for his presentation of "Influence of the Mold on Shrinkage in Ferrous Castings," by H. L. Womochel and C. C. Sigerfoos, published in A.F.A. Transactions, March, 1941.

Each group had a good attendance and the discussions were vigorous.

Old Timers and Apprentices Guests of Northeastern Ohio Chapter

By Edwin Bremer*, Cleveland, Ohio

NEARLY 300 members and guests attended the May 8 meeting of the Northeastern Ohio chapter held at the Cleveland Club, Cleveland. Since the meeting was the last to be held indoors for this year, President Fleig arranged an innovation which was termed "Old Timers—Some Timers—Young Timers Night," and at which the old-time foundrymen and the young apprentices were guests of honor of the chapter. Free refreshments and songs by a well-known quartet added zest to the proceedings. Ellis Van Der Pyle, sports announcer, radio station WHK, Cleveland, gave a short talk on a number of famous athletes he had met over a period of years. One of the high spots of the meeting was the premiere showing of a color motion picture entitled "The Story of Sand," which was prepared by Whitehead Bros. Co. Previous to the presentation of the picture, Van Loan Whitehead of that firm spoke briefly.

Announcement was made during the meeting of the election of officers for the coming year and they include: *President*—Frank Dost, Sterling Foundry Co., Wellington, Ohio; *Vice President*—John H. Tressler, Hickman, Williams & Co., Cleveland; and *Secretary*—Jack Lathrop, The Foundry, Cleveland. R. F. Lincoln, Osborn Mfg. Co., Cleveland, was re-elected treasurer. Directors elected for three

years include William Manwell, Fulton Foundry & Machine Co., Cleveland; Ray Fleig, Smith Facing & Supply Co., Cleveland; M. G. Thomas, City Foundry Co., Cleveland; Arthur J. Tuscany, Foundry Equipment Manufacturers' Association, Cleveland; and J. W. Horan, Sandusky Foundry & Machine Co., Sandusky, O. Sterling Farmer,

Sand Products Corp., Cleveland, was elected to fill the unexpired term of J. H. Tressler, who was elected vice president.

Discuss Cast Iron at New England

By M. A. Hosmer*, Boston, Mass.

JOHAN N. LUDWIG, JR., metallurgist, Electro Metallurgical Co., New York, was the speaker at the April 9 meeting of the New England Foundrymen's Association, held in the Engineers' Club, Boston. Charles O. Butler, Warren Pipe Co., president of the association, presided at the meeting.

In his talk, which was entitled "Metallurgical Properties of Cast Iron Controlled by Ferro-Alloys," Mr. Ludwig stressed the importance of not only the quantity, but also the type of carbon present in cast iron and showed how ferroalloys are used with

*Chemist, Hunt-Spiller Manufacturing Co., and Reporter, New England Foundrymen's Association.

Top—The Central Indiana chapter had three national officers at their April meeting. (Left to right) Seated at the speaker's table are: S. C. Wasson, National Malleable & Steel Castings Co., Indianapolis; B. P. Mulcahy, Citizens Gas and Coke Utility, Indianapolis; H. S. Simpson, vice president, American Foundrymen's Association, Chicago; R. E. Lee, Liberty Foundry Co., Inc., guest speaker; I. R. Wagner, chapter chairman, Electric Steel Castings Co.; C. E. Hoyt, executive vice president, American Foundrymen's Association, Chicago; E. O. Jones, director, safety and hygiene, American Foundrymen's Association, Chicago; and H. B. Harvey, Indiana Foundry Corp., Muncie. Bottom—Partial picture of the group that attended the meeting which was addressed by R. E. Lee.



*Metallurgical Editor, *The Foundry*, and Publicity Chairman, Northeastern Ohio chapter.

good success to control the properties of cast iron through their effect upon the carbon. The speaker recommended frequent chill tests during the heat to

which four will be selected as directors. The election will be held at the chapter's annual outing, June 10, at Hyde Park Country Club.



Left to Right—Bert Stockfleth, Enterprise Engine & Foundry Co., San Francisco; Ralph Lee, Grede Foundries, Inc., Milwaukee, and Bill Grede of the Same Firm.
(Photo Courtesy S. N. Farmer, Sand Products Corp., Cleveland)

bring about better control. Where it was necessary to get high total carbons, best results were obtained by using a base of low silicon pig iron. Irons of lower total carbon are used in general where good density and pressure-resisting properties are demanded.

Following Mr. Ludwig's presentation a lively discussion period was entered into with nearly every member participating.

Gates and Risers Is Subject at Cincinnati

By H. M. Wood*, Cincinnati, Ohio

THE May 20 meeting of the Cincinnati Chapter was held in Shuller's Restaurant, Cincinnati, with Chairman H. F. McFarlin, Lunkenheimer Co., Cincinnati, presiding. In a short business session preceding the presentation of the talk on "Gates and Heading" by E. J. Carmody, Charles C. Kawin Co., Chicago, L. A. Gosiger, S. Obermayer Co., Cincinnati, announced the plans for the annual outing.

J. B. Caine, Sawbrook Steel Castings Co., Lockland, Ohio, presented the report of the Nominating Committee. The report contained eight names from

*W. W. Sly Mfg. Co., and Secretary, Cincinnati District Chapter.

Detroit Discusses

Core Practice

By Art Allen*, Detroit, Mich.

ABOUT 50 members of the Detroit chapter were on hand for the final technical meeting of the 1940-41 season. Meeting was held as usual at the Detroit-Leland hotel, with Glenn Coley, Detroit Edison Co., presiding. Speaker was Elmer C. Zirzow, core room foreman, National Malleable & Steel Castings Co., Cleveland. He presented an interesting analysis of the various types of sands used in the malleable foundry, how they are purchased, graded and

*Penton Publishing Co., and Secretary, Detroit Chapter.



V. H. Schnee of Battelle and Frank Steinebach, The Foundry, and Foundry Equipment OPM Chief, Seem Happy.

(Photo Courtesy B. H. Booth, Jackson Iron & Steel Co., Jackson, Ohio)

mixed for use. He also examined in some detail the core practice at his plant, and showed slides to illustrate his comments. Preceding the technical address, Mr. Coley read report of the nominating committee for new officers and directors of the chapter for the coming season. Next meeting, June 19 at Tam-O'-Shanter Country Club, will be the annual business meeting at which installation of the new officers will be made.

E. E. Birkland Dies

E. E. BIRKLAND, engineer of maintenance, Crane Co., Chicago, an active participant in the work of the Industrial Hygiene Codes Committee of the A.F.A., died at his home in Chicago on April 1. He was 57 years old.

Born in Sweden, he was graduated from Falun Sweden in mechanical engineering and the following year came to the United States and settled in Chicago. He was employed in the engineering department, Western Electric Co., Chicago, for 2 years and then became associated with the Crane Co., Chicago, first as draftsman, then as chief draftsman and later as engineer of maintenance, the position he held until his death.

In addition to his interest in the work of the Safety and Hygiene Section of A.F.A., Mr. Birkland had been a member of the Swedish Engineers Society of Chicago for many years.

Abstracts

NOTE: The following references to articles dealing with the many phases of the foundry industry, have been prepared by the staff of *American Foundryman*, from current technical and trade publications.

When copies of the complete articles are desired, photostat copies may be obtained from the Engineering Societies Library, 29 W. 39th Street, New York, N. Y.

Aluminum Alloys

CASTINGS. "Aluminum Castings for Aircraft," by Norman E. Woldman, *The Iron Age*, vol. 147, no. 9, February 27, 1941, pp. 37-43. In this article, it is the desire of the author to discuss the subject of aluminum in aircraft but limiting the subject to castings only. Aluminum casting alloys may be classed in four groups as follows: sand castings, permanent mold castings, die castings and plaster mold castings. The author then discusses the various types of aluminum casting alloys as follows: silicon-aluminum alloys; copper-aluminum alloys; copper-silicon-aluminum alloys; magnesium-aluminum alloys; magnesium-copper-aluminum alloys and nickel-magnesium-aluminum alloys, giving their various qualities and characteristics. Returning to the sand casting procedure, such important items as section thickness, gating, risering, chilling, pouring temperature, sand permeability and moisture content are discussed. Various uses and characteristics of the sand casting aluminum alloys are presented. (N.F.)

DIE-CASTING. "Gravity Die-Castings in a High-Strength Aluminum Alloy," *Foundry Trade Journal*, vol. 64, no. 1272, January 2, 1941, pp. 3-4, 6. A great prejudice existed for a long time against the use of cast alloys for parts likely to be subjected to appreciable stresses in service. In one particular respect, the development of aluminum-alloy castings suffered from serious initial disadvantages—the poor casting properties of aluminum metal itself, and its low strength in the cast form—such disadvantages restricting the use of cast aluminum to cases in which the outstanding chemical and physical properties of the metal were essential in the final product. The discovery of casting alloys of aluminum which combined to a great degree the physical and chemical properties of the metal with considerably higher strength and excellent casting qualities marked a major advance in the industrial utility of aluminum alloys, an advance tempered only by the fact that for some considerable time no elongation figure could be guaranteed in the case of the alloys of higher strengths. The article gives information on high and low strength materials, mechanical properties, test-pieces, application of aluminum cast products and foundry properties. (N.F.)

MACHINING. "Machining of Aluminum Alloys," *The Metal Industry* (London), vol. 47, no. 13, March 28, 1941, pp. 288-291. The machining of aluminum and its alloys, though not difficult, requires a special technique if maximum results are to be obtained. This article discusses the fundamental factors governing light alloy machining with the object of assisting those to whom the machining of aluminum alloys is a new departure. (AL)

Castings

RIGHTS AND WRONGS. *Castings and Forgings—The Rights and Wrongs of Details*, by Ernest Geiger, *Product Engineering*, vol. 12, no. 2, February, 1941, pp. 72-73. In designing for castings, the many small details that make shop operations easier and cheaper should be carefully checked for correctness. Rights and wrongs of many details are illustrated on these two pages. Although all changes suggested in the sketches are simple ones—in many cases involving merely the change in contour—they may result in large savings in time, materials and tools. (C.)

Cast Iron

HARDENABILITY. "Jominy Test of Meehanite," by A. C. Denison, *The Iron Age*, vol. 147, no. 17, April 24, 1941, pp. 41-45. Originally employed to determine the hardening characteristics of tool steels, the Jominy test is now being experimentally used to ascertain the best type of heat treated cast irons for various applications. It was decided to make an investigation in which the effect of calcium-silicide treatment on hardenability was to be determined. A series of specimens were run to quench from 1525°F., 1580°F., and 1625°F., and soaking periods varying from 3 min. to 1 hour were used at the intermediate 1580°F. temperature, all with the idea of getting some light on the importance of temperature and soaking time as a factor in this research. The tests indicated Meehanite suitable for normal heat treatment is not unduly sensitive to breakdown on reasonable soaking periods and not nearly as sensitive as many other irons. Therefore, some of the investigation was determined by using 30-min. soak periods at 1580°F. and, where permissible, to check this with 3-min. soak periods at the same temperature. From the various charts which are shown in this paper, it can readily be seen that within certain limits, silicon content has very little or no effect on the hardening qualities of this cast iron. Also total carbon, within certain ranges, has little effect on the reaction rates in cooling. Manganese greatly affects the reaction rates, and if light section castings are to be hardened, it can be done even though the castings contain only the normal amounts of manganese. (C.I.)

HIGH STRENGTH. "Melting and Casting Problems in the Production of High-Strength and Special-Duty Alloy Iron Castings," by A. E. McRae Smith, *Foundry Trade Journal*, vol. 64, no. 1283, March 20, 1941, pp. 191-193. Under the present day conditions prevailing in England, it has been necessary for the iron foundry industry to undertake the production of high-strength and special-duty

cast irons over a considerably wider range of application than previously. This paper gives the advantages of duplexing and essential details in cupola practice to obtain a base composition with controlled carbon content. The new technique introduced to make special-process, high-strength cast irons is based on carbon control, with a balanced silicon content and the formation of random graphite patterns. The author then gives the sphere of high-duty irons, available materials, general utility high strength irons, acicular or pseudo-martensitic structures and the use of molybdenum in cast iron. (C.I.)

HOT TINNING. "How to Hot Tin Cast Iron," *The Iron Age*, vol. 147, no. 17, April 24, 1941, pp. 55-58. A report containing all the important data available up to June, 1940, on the ever-growing practice of tinning cast irons. Includes instructions as how to clean castings before tinning, detailed data on fluxing and hot-dip tinning and tinning by wiping. (C.I.)

HYDROGEN. "Hydrogen in Steel and Cast Iron," by C. A. Zapffe and C. E. Sims, *Metals and Alloys*, vol. 13, no. 4, April, 1941, pp. 444-447. This is the first installment of an article which discusses the effect of hydrogen in steel and cast iron on vitreous enameled coatings. Hydrogen absorption and hydrogen effusion at elevated temperatures as well as hydrogen absorption and hydrogen effusion at ordinary temperatures are reviewed in detail, including the effects on applied coatings. This article has a great deal of practical value and should be worth while reading for every foundryman. (C.I.)

MICROGRAPHS. "The Polishing of Cast Iron Micro-Specimens and the Metallography of Graphite Flakes," by H. Morrogh, *The Iron and Steel Institute* (London), May, 1941, pp. 1-11. A polishing technique has been developed for gray cast irons, whereby the graphite flakes can be obtained perfectly preserved and smoothly polished. The polishing medium used is either Diamantine or magnesium oxide. The method owes its success to the correct application of a repeated polishing and etching operation. With specimens prepared in this manner, it is possible to examine the internal structure of the graphite flakes and temper carbon nodules. Secondary graphite is shown to be deposited either on the existing eutectic graphite flakes or in a Widmanstätten pattern. Graphite flakes show complicated internal structures, which are illustrated micrographically using polarized light. "Inclusions" also are shown intimately associated with graphite flakes. (C.I.)

MOLDING. "Book Molding With Green Sand Cores," by E. H. Ballard, *The Iron Age*, vol. 147, no. 13, March 27, 1941, pp. 53-56. Problems occur many times in the foundry industry concerning the production of castings. Here is a typical example of how "booking" motor frame castings with intricate coring and doing it



successfully on a production basis is accomplished. The General Electric Co. needed motor frames having maximum strength, minimum weight, protection for motor winding, suitable air passage ventilation and other features. A wooden model was made and engineers, pattern-makers and foundrymen got together and agreed upon the final design after careful study. A method of producing frame castings without the use of dry sand cores was proven and a modified method of making green sand cores as a part of the whole molding function was devised. A special core molding machine with double-jolt-ram tables and single roll-over unit of the flask draw type was used. The molding machine was a cope and drag, jolt-ram, squeeze strip type. All metal pattern and core boxes also were used. The sequence of operation is shown in the series of sketches and some of the more significant steps are illustrated by photographs. (C.I.)

WEAR RESISTANCE. "Wear and Scuffing of Cylinder Bore Irons," by Paul S. Lane, *Metal Progress*, vol. 39, no. 3, March, 1941, pp. 315-320. The author shows that the change in hardness in an engine cylinder casting means a change in other properties such as graphite size, strength of the iron and its wear or abrasion resistance. Aside from the section effect, structural variations are also influenced by various foundry procedures, such as melting and pouring temperatures, molding materials, gating, shakeout practice—all of which may vary even though the analysis may be constant. Considering these points one readily appreciates the complexity of an engine cylinder casting, having as it does a wide range of section thickness with a variety of cooling rates. Specimens were taken from engine cylinder castings at various locations and tested for wear on a wear testing machine of the "brake shoe type." This paper is devoted to these results and also to the various structures found. The data in the paper serve to show how design influences the metal structure, which in turn appears to determine the resistance to abrasion or wear. The various structures encountered in engine bores would lead one to believe that further experimentation should result in improved performance. While cylinder wear alone may not be considered acute at the present moment, it will be agreed that scuffing and scoring of rings and cylinders warrants attention. (C.I.)

WELDING REPAIRS. "The Repair of Cast Iron Parts," *The Welding Industry* (London), vol. 8, no. 11, December, 1940, pp. 295-297. The successful welding of cast iron requires from the operator a sound knowledge of welding generally, and of the particular technique for this work, and thorough preparation of the work before welding is begun. The technique of cast iron welding is different from that of mild steel welding. In the case of cast iron, the base metal (the cast iron) is non-ductile and cannot be subjected to deformation; therefore, cast iron cannot always withstand the welding stresses. Also, the deposit of the mild steel electrode, which by nature has a much greater ductility, absorbs a large quantity of carbon from the cast iron thus increasing the hardness and reducing the elongation. In addition, the junction is very hard, as it invariably consists of white cast iron owing to the rapid cooling caused by the cold base metal. To ensure a sufficiently close union between the weld and the cast iron a mechanical intermediary is often intro-

duced, tapped mild steel studs which are screwed into the cast iron. This gives strength between the cast iron and the weld deposit. Some typical examples of cast iron repairs are described in this article, and they have been selected so as to show the wide range of such work which can be done if approached in the right manner. (C.I.)

Machinability

TESTING. "Tests Tell the True Story of Machinability," by John P. Walsted, *Steel*, vol. 108, no. 7, February 17, 1941, pp. 76-78. A highly satisfactory machinability test is described and data are presented to show how it eliminates those test variables which often make machinability tests inaccurate. This particular test makes use of a positive feed on the drill and measures the point pressure developed. With some refinements, such as providing a pilot hole and use of a calibrated spring as a measuring device, this can be regarded as the best test at present, so the author states. Using this test some interesting comparisons are made, comparing irons from different shops and irons cast long ago. (Te.)

Magnesium

WELDING. "Welding Magnesium and Its Alloys," by W. Spragen and G. E. Claussen, *The Welding Industry* (London), vol. 8, no. 11, December, 1940, pp. 301-305, 309. This is a continued article which is a report prepared under the auspices of the Literature Division of the Engineering Foundation Welding Research Committee. This report was first published in the *Journal of the American Welding Society*, vol. 19, no. 8, and it presents a review of the metallurgical literature and research data available up to July, 1939. (N.F.)

Manganese Bronze

CASTING. "The Casting of Manganese Bronze," by E. Longden, *The Metal Industry* (London), vol. 47, no. 10, March 7, 1941, pp. 222-225. The technique of molding and casting of non-ferrous metals varies with the alloy and to this, manganese bronze is no exception. In this article, after discussing in a general manner the composition, physical properties and heat treatment of these alloys, the author deals with molding practice, illustrated by detailed reference to concrete examples. (N.F.)

Molding

LOW TEMPERATURE. "The Chilling of Green Sand Molds," *The Metal Industry* (London), vol. 47, no. 12, March 21, 1941, pp. 265-266. This article describes a novel method of improving the chilling properties of green sand molds, namely by subjecting them to a freezing process. It is suggested that in addition to improvement in mechanical properties of the molds, the consumption of molding sand would decrease and a much wider choice of molding materials would become available. (Mo.)

Munitions

HISTORICAL. "High Explosive Shell," by Arthur F. MacConochie, *Steel*, vol. 108, no. 4, January 27, 1941, pp. 44-47. To understand fully the problems connected with modern shell production, the very interesting background of shell development is traced from the invention of gunpowder by the Chinese about the sixth century, to the use of the first cast iron cannon ball. (C.I.)

Non-Ferrous

GATING. "Gating Non-Ferrous Castings," by N. K. B. Patch, *The Foundry*, vol. 69, no. 1, January, 1941, pp. 46-47, 112-114. Good castings depend upon the standardization of all the different items that go to make up foundry practice. To standardize a gate by having a definite gate pattern for the purpose is one of the most important items in insuring a uniform product. A gate having a restriction that produces a squirting effect when the metal enters the mold invariably will cause trouble, particularly with those alloys readily forming scum or dross. The author gives valuable information concerning the gating and risering of non-ferrous castings and shows why, with a definite gating design, standards should be adopted governing mold position during the pouring process. (N.F.)

GATES AND RISERS. "Top Pouring Methods for Non-Ferrous Castings," by Arthur K. Higgins, *The Iron Age*, vol. 147, no. 19, May 8, 1941, pp. 56-61. This paper contains valuable data on the application of top pouring methods to commercial castings, such as may be met with in the non-ferrous jobbing foundry. Many factors are dealt with, as for instance the different feeding practices and techniques, the gating systems, avoidance of dross, continuous feeding, to what type of castings these methods have been applied, core breakage and other important information. A solution to the cost problem as worked out by the author's company also is explained. (N.F.)

GATES AND RISERS. "Gates and Risers," by W. B. George, *The Iron Age*, vol. 147, no. 19, May 8, 1941, pp. 52-55. To understand the technique required in the proper placing of gates and risers, the author gives a clear picture of what takes place within the casting. Columnar grains predominate in copper-tin and red brass alloys. The size of the grain is governed by the cooling rate. The author shows examples of the right and wrong ways to gate and riser different jobs encountered in foundry operation. (N.F.)

MAGNESIUM CASTINGS. "Straightening Magnesium Castings," *The Metal Industry* (London), vol. 47, no. 25, December 20, 1940, p. 489. The American Magnesium Corp. explains how to straighten magnesium alloy castings. The casting heated quickly to 430°F., placed under a press with proper support and deflected slowly to a point somewhat beyond the point of straightness to allow for spring-back, the casting then is permitted to cool to room temperature in the press. The amount of deflection allowed for "spring-back" must be determined through experience and varies with the type of casting being straightened. (N.F.)

MAGNESIUM ALLOYS. "Magnesium Alloys in Industry," by John C. Mathes, *Metals and Alloys*, vol. 13, no. 1, January, 1941, pp. 23-29. This article gives information on some of the industrial applications of magnesium alloys where the substitution of lighter weight material is advantageous. Five special fields are discussed—manually-handled tools, certain parts of high-speed machinery, transportation, machining and utilization of chemical and physical properties. (N.F.)

Patternmaking

MATERIALS. "Patterns Demand the Best in Skill, Tools and Materials," by Vaughan Reid, *The Foundry*, vol. 68, no. 12, December, 1940, pp. 34-37, 112-

113. This discussion on patternmaking deals with the fundamentals of the industry. The author recommends the training of apprentices in the shop and giving them every opportunity to learn the trade. Conditions during the past few years have changed the foundry industry's viewpoint concerning patterns in relation to size and build. The writer points out that the thing to do to cut down pattern costs is to adapt patterns to suit conditions. The pattern shops of today have taken a few lessons from production plants in plant lay-out by arranging the machines so that as few steps as possible will be necessary to get to the machines most often used. The material employed in making patterns should be of the highest grade and quality. Lumber should be selected with care and stored with care to avoid extra expense and time. The article is concluded with a few remarks concerning the iron used chiefly in building production metal patterns. (Pa.)

Patterns

TOOLS. "Patterns Demand the Best in Skill, Tools and Materials," by Vaughan Reid, *The Foundry*, vol. 69, no. 1, January, 1941, pp. 43-45, 115-118. This section of the author's article discusses metal patterns and how they are made in this particular shop. After trying different aluminum alloys for pattern work, the author found that the analysis itself was not the important thing but it was the method and care used in melting. Pin hole defects, caused by stirring the molten bath or improper furnace conditions, are explained and the measures taken to remedy the situation are given. Throughout the article, examples are given showing how conditions can be made better in the pattern shop through the use of good tools and knowing how to use them. (P.)

Steel

HEAT TREATMENT. "The End-Quench Test for Evaluating Heats of Steel," by A. P. Terrile and P. R. Brucker, *Metal Progress*, vol. 39, no. 1, January, 1941, pp. 37-42. Two outstanding features of the end-quench test are the extremely rapid quenching of the base end of the specimen by continuous contact with an impinging stream of water and the graduated lessened cooling rates that occur from the base upward toward the unquenched end of the specimen. The second feature is the speed and facility of obtaining the hardness values. The value of any test is to correlate its results to the use of the material in service. The end-quench test ideally serves this purpose for steel, because the cooling rates as measured along the specimen may be correlated by comparative measurements of cooling rates at any selected location on heat treated parts. (S.)

OPEN-HEARTH PROCESS. "Controlling Reactions in the Open-Hearth Process," by B. M. Larson, *Metals Technology*, vol. 8, no. 3, April, 1941, pp. 1-12. This paper aims to present, and to justify the viewpoint that the most significant reaction is the oxidation of carbon in the metal, the progress of which determines the oxygen pressure levels in slag and metal and produces stirring effects, all of which influence the course of the process as a whole. The general "working theory" of the open-hearth bath system with the carbon reaction acting as the important fundamental control factor in the working period of the heat, has certain logical consequences for the process control, some of which can be explained. The so-called "control of iron oxide in slag" is consid-

ered to have little significance to actual operating control, as iron oxide in the slag is a secondary rather than a primary factor. The essential fundamental variables become: bath temperature, oreing rate, charge composition and slag basicity. The slag basicity becomes an independent variable, which can be controlled entirely from the point of view of operating convenience and efficiency plus the attainment of requisite (S) and (P) contents. Certain secondary variables such as slag viscosity, bath depth, speed of working, and others, tend to be reduced in importance with respect to FeO levels in the steel and therefore may be controlled, at least within certain reasonable limits, entirely from the point of view of operating convenience and economy. (S.)

PRECIPITATION HARDENING. "Precipitation Hardening," by J. W. Halley, *Steel*, vol. 108, no. 7, February 17, 1941, pp. 92, 102-103. Many fabricators appear to be overlooking an important characteristic of low-alloy, high-tensile strength steels containing 1 to 2 per cent copper. By a precipitation hardening treatment, tensile strengths can be increased 20,000 to 25,000 lb. per sq. in., yield points similarly increasing. Hardness is increased as much as 70 Brinell with freedom from distortion and mass effect. Such a steel can be cold formed in most ductile, normalized or hot-rolled condition, followed shortly by precipitation hardening to the maximum strength. (S.)

RESEARCH. "Research Problems Relating to Steelmaking Processes," by John J. Egan, *Metals Technology*, vol. 8, no. 3, April, 1941, pp. 1-7. The list of problems in this paper relates to the physical chemistry of steelmaking and has been prepared by the Committee on the Physical Chemistry of Steelmaking, from answers to a questionnaire submitted to a number of metallurgists engaged in both industrial and educational work throughout the United States. The purpose of this subject was to make available to research laboratories a list of problems, all reduced to the simplest terms, the solution of which would aid in creating a better understanding of the steelmaking process. (S.)

Steel Melting

ELECTRIC. "Tapping Electric Steel Melting Furnaces," by C. W. Briggs, *Industrial Heating*, vol. 7, no. 11, November, 1940, pp. 1074-1075. This is a resume of C. W. Briggs' presentation before a joint meeting of the Steel Founders' Society of America and the Electric Metal Makers' Guild. Emphasis is placed on the importance of tapping and metal transfer. Such items of interest as how superheat affects physical properties; provisions for the care and maintenance of ladles and linings; and operating problems are discussed. Hot tears caused by stresses set up in casting are a problem for the designer and foundryman, according to the speaker. Causes for low ductility also are commented on. (F.)

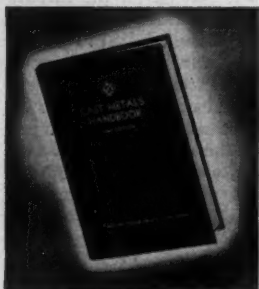
Testing

ANALYSIS. "How Good Is Your Sample?" by Dr. J. T. MacKenzie, *Pig Iron Rough Notes*, no. 82, Autumn, 1940, pp. 5-8. This article gives a resume of some sample analysis problems encountered by chemists in various foundry plants and how the foundryman can help overcome these obstacles by giving him good samples to check. A few tips are presented for the foundryman to remember in submitting samples to the chemist for analysis. For pig iron, send the chemist one-half pig for each ten tons of the carload. For ladle analysis the chemist needs a sample of about half-pound cast in a chill. For a casting the analyzer must have a whole casting, with instructions as to what is desired, average analysis, or differences in the various sections, such as total or combined carbon, phosphorus, manganese, and sulphur, or the collection of dirt or deoxidizers as might be shown by excessive silica, alumina, etc. For average analysis, a simple thin-section is best, a gate is next, and a riser is the poorest, as it is liable to contain an excess of dirt and manganese sulphide. Drillings are the wrong thing to send a chemist for analyzing because they are usually low in carbon from loss of graphite, high in silicon because they are dirty, and low in sulphur because of exposure. (T.)

June Chapter Schedule

June 7	June 19
Western New York	Detroit
Annual Picnic	Annual Meeting and Outing
+	Tam-O'-Shanter Country Club
+	
June 10	June 20
Cincinnati	Southern California
Annual Outing	Annual Meeting and Ladies' Night
Hyde Park Country Club	+
+	+
June 11	June 21
Philadelphia	Quad City
Annual Picnic	Annual Outing
+	Eagle Country Home, Rock River, Ill.
+	+
June 13	June 28
Central New York	Northeastern Ohio
Elmira	Annual Stag Outing and Golf
+	Tournament
+	+
June 14	
St. Louis District	Pittsburgh Foundrymen's Association
Annual Outing	Annual Outing
Joe Davies' Country Club,	Chartiers Heights Country Club
Ferguson, Mo.	

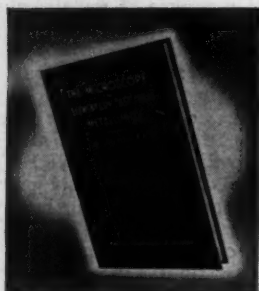
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